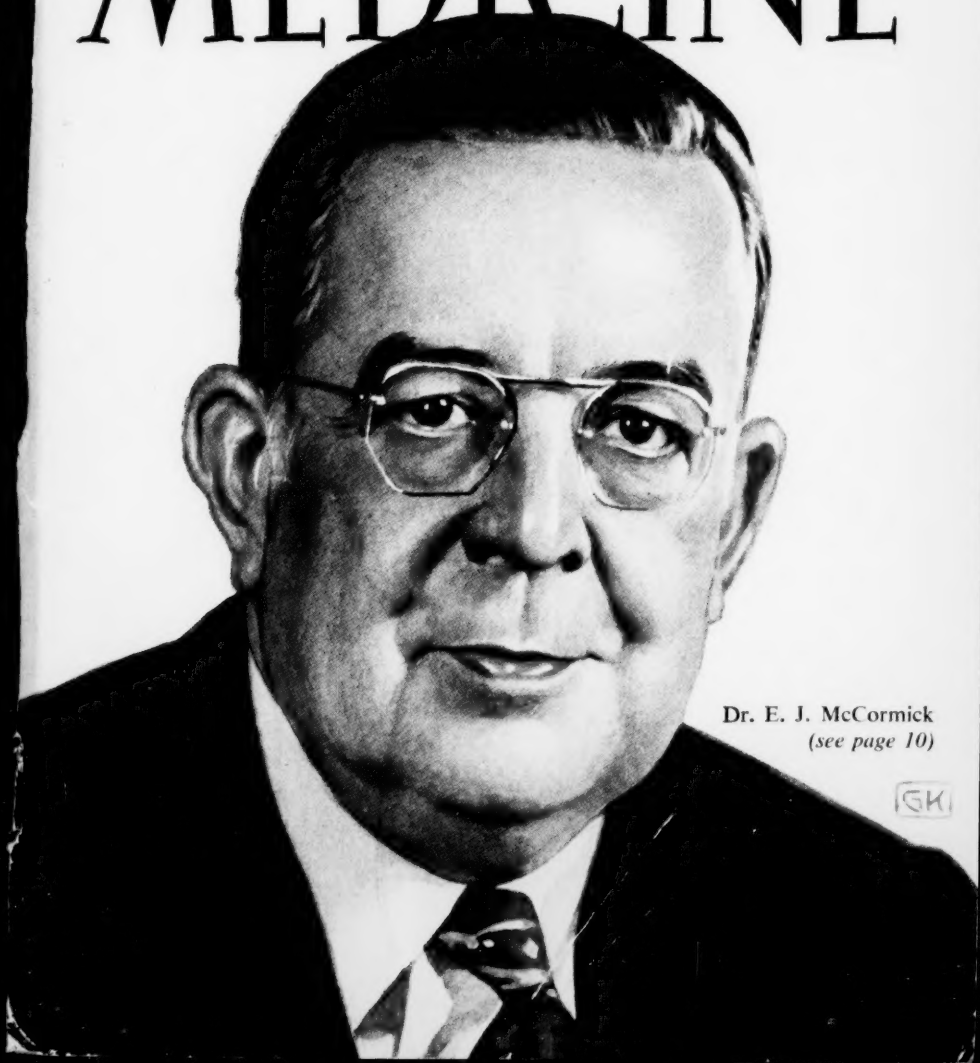
JUNE 15, 1953

MODERN MEDICINE

The Journal of Diagnosis and Treatment



Dr. E. J. McCormick
(see page 10)

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Isn't that what you want for your hypertensive patients?

Nitranitol provides it . . . permitting hypertensives to resume more normal lives.

And . . . therapeutic dosages of NITRANITOL can be maintained over long periods of time . . . *without* frequent checkups . . . *without* worry about possible toxic effects.

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5. **For refractory cases of hypertension**—*NITRANITOL P.V. (Nitranitol, Phenobarbital, Veratrum Alkaloids*)*

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to prevent attacks in angina pectoris

4 out of 5 patients respond in 3 studies

The consistency with which Peritrate can prevent attacks in angina pectoris is demonstrated in the published reports of three investigators. Each obtained good results in almost the same high percentage of patients:

Humphrey *et al.*[1] ...*78.4% fewer attacks*
Plotz[2] .....*80% fewer attacks*
Dailheu[3] .....*80% fewer attacks*

Used as a prophylactic agent — rather than to provide relief when an attack is present or imminent — Peritrate will in many cases

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- reduce the severity of attacks which are not prevented

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Extensive clinical use has demonstrated that, in addition to preventing or minimizing attacks, Peritrate will frequently

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- improve the EKG picture

For effective prophylaxis

A long-lasting coronary vasodilator, Peritrate provides prophylactic action for 4 to 5 hours. Administration must be maintained on a continuing daily schedule—usually one tablet 3 or 4 times daily. Some patients will require a 2-tablet dose. Peritrate is available in 10 mg. tablets in bottles of 100, 500 and 5000.

1. Humphreys, P., *et al.*: Angiology *3*:1 (Feb.) 1952. 2. Plotz, M.: N. Y. State J. Med. *52*: 2021 (Aug. 15) 1952. 3. Dailheu-Geoffroy, P.: L'Ouest-Méd., vol. 3 (July) 1950.

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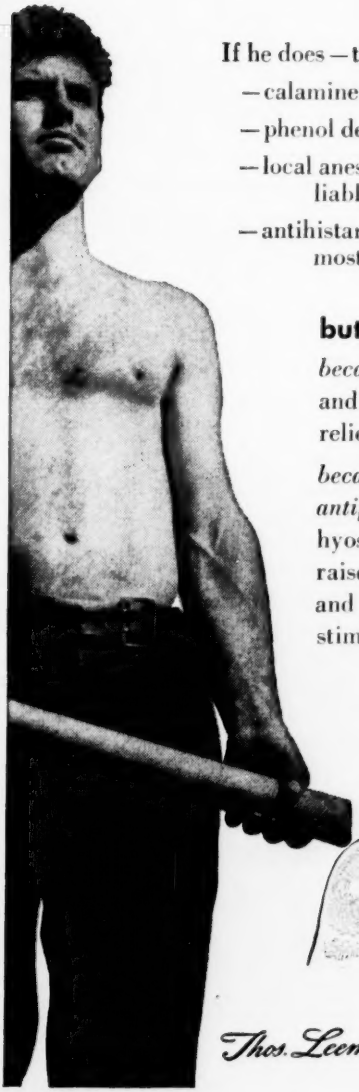
he may or may not get poison ivy



If he does — treatment should exclude

— calamine preparations which are ineffective[1]

— phenol derivatives which are irritating[2]

— local anesthetics of the "caine" group liable to cause contact dermatitis[3]

— antihistaminics which may produce some of the most severe reactions due to sensitization[3]

but he can rely on Calmitol —

because Calmitol does not sensitize and is "preferred"[2] by physicians for safe relief of pruritus.

because Calmitol contains specific antipruritic agents — camphorated chloral, hyoscyamine oleate and menthol — which raise the threshold of sensory nerve endings and skin receptors, thus inhibiting itch stimuli at the point of origin.

1. Goodman, H.: J.A.M.A. 129: 707, 1945.
2. Lubowe, I. I.: New York State J. Med. 50: 1743, 1950.
3. Nomland, R.: Postgrad. Med. 11: 412, 1952.

the non-sensitizing antipruritic

Thos. Leeming & Co. Inc. New York 17, N.Y.

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THE JOURNAL OF DIAGNOSIS AND TREATMENT

MODERN MEDICINE, The Journal of Medical Progress, of Minneapolis, Minn., is published twice monthly on the first and fifteenth of each month, at 55 East 10th Street, St. Paul 2, Minn. Subscription rate: $10.00 a year, 50c a copy.

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THE JOURNAL OF DIAGNOSIS AND TREATMENT

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Oral dosage: usually 4 to 8 tablets daily, given morning and evening. Critical adjustment unnecessary.

Slows the pulse rate, has a mild sedative effect. Symptomatic improvement is marked.

Especially suited to relatively mild, labile hypertension. Recommended in combined treatment of advanced cases.

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RAUDIXIN
SQUIBB RAUWOLFIA SERPENTINA
Tablets

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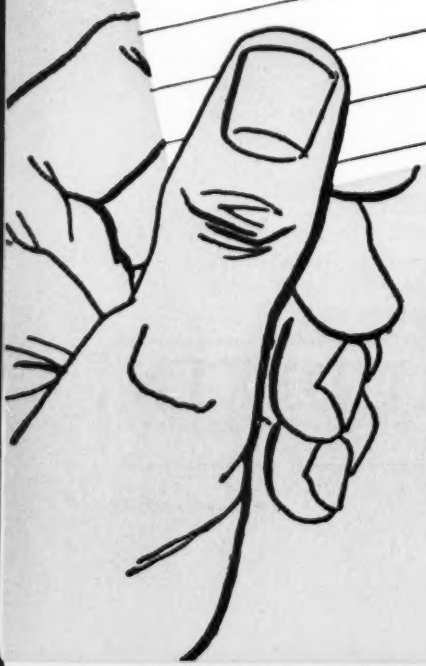
'RAUDIXIN' IS A TRADEMARK

Consider the diagnosis:

Patient over 40...
extremely painful recurrent arthritis...
resistant to routine antiarthritic
therapy...



McNEIL

LABORATORIES, INC. · PHILADELPHIA 32, PA.

1. McCracken, J.P. et al: Gout: Still a Forgotten Disease, J.A.M.A. *131*:367-372 (June 1) 1946.
2. Freyberg, R.H.: Practical Considerations in the Management of Arthritis, Pennsylvania M. J. *51*: 729-738 (April) 1948.

GOUTY ARTHRITIS

Arthritis which occurs acutely or subacutely and is associated with complete remission "should be considered gout until proved otherwise."[1]

In early attacks especially, states Freyberg,[2] "gouty arthritis may be difficult to differentiate from other forms of acute arthritis. In such instances the therapeutic test with colchicine should be employed."

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'McNEIL'

Each Tablet Cinbisal contains:

Colchicine.....0.25 mg. (1/250 gr.)
Sodium Salicylate.....0.3 Gm. (5 gr.)
Ascorbic Acid.....15 mg.

So dramatic is the response to Cinbisal that it may well be employed as a therapeutic test in the diagnosis of gouty arthritis. Cinbisal promotes urate elimination via the kidneys and relieves pain promptly.

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One or two tablets every four hours.

SUPPLIED:

Bottles of 100 and 1000 tablets (Engestic ® coated green.)

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TABLE OF CONTENTS

for
June 15
1953

Modern Medicine
Vol. 21, No. 12

THE MAN ON THE COVER is Dr. Edward J. McCormick of Toledo, who has recently taken office as president of the American Medical Association. Dr. McCormick is surgeon and president of the advisory board of St. Vincent's Hospital and a member of the staff and board of trustees of Maumee Valley Hospital. A former president of the Academy of Medicine of Toledo, he is a diplomate of the American Board of Surgery and a fellow of the American College of Surgeons. A member of the Medical Mission to Japan in 1948, Dr. McCormick also served as a delegate to the Third World Health Organization meeting in Geneva in 1950.

IN ANY ALLERGY

'Co-Pyronil' *

affords

more profound,

more prolonged

relief with

fewer side-effects

than any other

known

antihistaminic.

Lilly

*'Co-Pyronil' (Pyrrobutamine Compound, Lilly)

Dosage

Mild symptoms: 1 pulvule every twelve hours.

Moderate symptoms: 1 pulvule every eight hours.

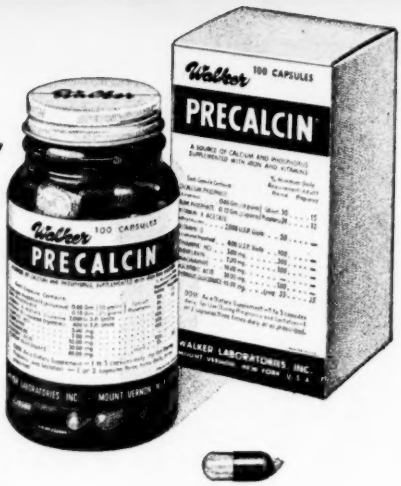
Severe symptoms: 2 pulvules every eight hours.

mineral-vitamin protection
during **PREGNANCY**
and **LACTATION**

Walker

PRE

CAPSULES



organic and inorganic calcium, phosphorus, iron, and essential vitamins

small, easy-to-take capsules

just one capsule t.i.d.

dry fill, no fish oil

exceptional tolerance and patient-appeal

bottles of 100, 500, 1000 —all economically priced

WALKER LABORATORIES, INC.
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Contents for June 15 1953

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for the treatment of

BURSITIS and ARTHRITIS

(Musculo-fasciaitis)

COBADEN

(RAND)

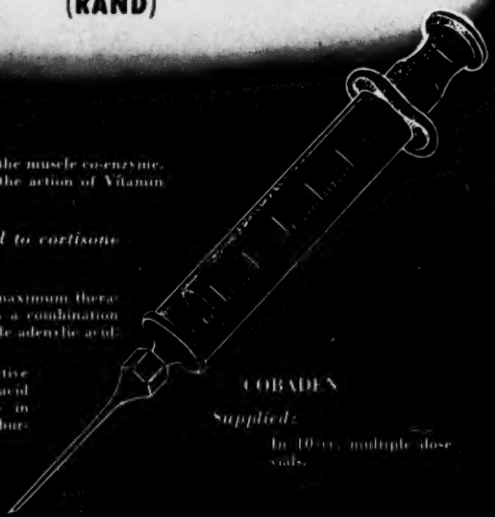
NOW

The therapeutic usefulness of the muscle co-enzyme, adenylic acid is enhanced by the action of Vitamin B_{12} (Cyanocobalamine).

Adenylic acid is unrelated to cortisone or the steroid hormones.

Clinical reports demonstrate maximum therapeutic action is obtained with a combination of Vitamin B_{12} and pure muscle adenylic acid.

COBADEN is far more effective than either B_{12} or adenylic acid when administered separately in the treatment of arthritis or bursitis (musculo-fasciaitis).



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Supplied:

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COBADEN

each cc. contains:

Adenosine-5-Phosphoric acid . . . . . 25 mg.
(ATP or adenylic acid)

Cyanocobalamine (B_{12}) . . . . . 60 mcg.

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Superior Analgesic Combination

TRYADS

TRADE MARK

WAMPOLE

FORMULA

Each tablet contains:
(1) Salicylamide . . 225 mg. (3½ gr.)
(2) dl-Desoxyephedrine hydrochloride . . 2 mg. (1/30 gr.)
(3) Acetophenetidin . 150 mg. (2½ gr.)

Superior—Safe Analgesia without Opiates

SALICYLAMIDE possesses an antirheumatic, analgesic effect hardly approached by other salicylic acid compounds—7.5 times the analgetic potency of aspirin.

The absence of any significant untoward effects upon the kidneys, blood or internal organs, when fed to laboratory animals over long periods of time, places SALICYLAMIDE alongside aspirin as a safe analgesic. Unlike other salicylates, salicylamide does not increase prothrombin time. Therefore, TRYADS are safe to use after tonsillectomy and tooth extraction.

Smoother—More Efficient Action

By combining analgesics of different classes of drugs, a smoother, more efficient analgesic action is achieved. The addition of acetophenetidin, a complementary analgesic, is supported by clinical use.

Relief from Pain-induced Psychic Depression and Fatigue

dl-DESOXYEPHEDRINE improves psychic and psychomotor function. The small oral dosage employed in TRYADS Tablets relieves the pain-inflicted depression and fatigue.

INDICATIONS: Myalgia, arthralgia, neuralgia, simple headache, migraine, dysmenorrhea, postoperative pain following minor surgery, malaise and fever associated with the common cold and similar disorders.

Dose: 1 to 2 tablets every 2 to 4 hours as required.

Supplied: Tablets, scored; bottles of 100 & 500.

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when you are challenged with—

"But Doctor, can't you make them eat?"

specify — Trophite* B_{12} plus B_1

to increase appetite and growth in below-par children

Recommended daily dosage—only one teaspoonful (5 cc.) containing:
25 mcg. Vitamin B_{12} and 10 mg. Vitamin B_1. Delicious cherry flavor.

*T.M. Reg. U.S. Pat. Off.

Smith, Kline & French Laboratories, Philadelphia

LETTER FROM THE EDITORS

Dear Reader:

Dr. Edward J. McCormick, whose portrait appears on the cover of this issue, was installed as president of the American Medical Association at the AMA convention in New York a few days ago. We salute the AMA and its new president for one of the organization's most successful medical meetings. Lectures, discussions, films, TV, demonstrations, and exhibits covered the wide range of medicine and offered something of interest to every visitor.

The meeting places were thronged. Thousands of practitioners took part in the world's largest scientific gathering. Yet less than 10% of the nation's physicians were in attendance. Among this 10% were many of the 74 physicians of our own editorial organization. They were there to see how they could best bring the convention to the 90% who couldn't attend.

In common with the other visiting physicians, the *Modern Medicine* representatives were most impressed with the scientific exhibit section. Medical investigators and clinicians had here reduced to the essentials their experiences with new methods of diagnosis and new agents of treatment. The practical information was presented graphically and tersely. It was prepared by the physician for the physician.

A number of these interesting exhibits have been selected for publication in forthcoming issues of *Modern Medicine,* for the benefit of the 90% who stayed at home.

The Editors

APAMIDE

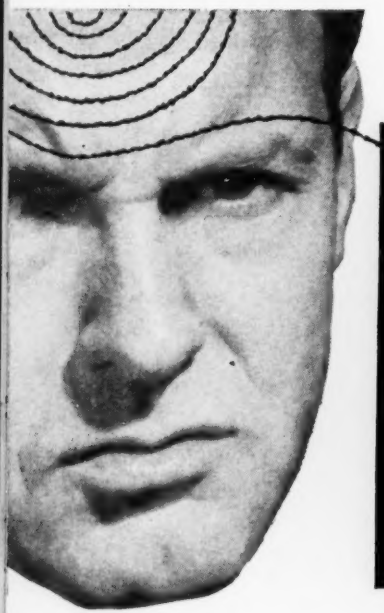
TRADEMARK

tablets

(N-acetyl-p-aminophenol, *Ames*, 0.3 Gm.)

analgesic-antipyretic

in headache.....



APROMAL

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tablets

(N-acetyl-p-aminophenol and acetylcarbromal, *Ames*, 0.15 Gm. each)

sedative-analgesic

Apamide **and** ***Apromal*** **are** ***prescription-protected.***
Dosage and duration of treatment are controlled by ***you.***
May be prescribed for those intolerant to salicylates.

Average adult dose **for** ***Apamide*** **or** ***Apromal:***
1 tablet every 4 hours, or as required.

prompt... prolonged... prescribed

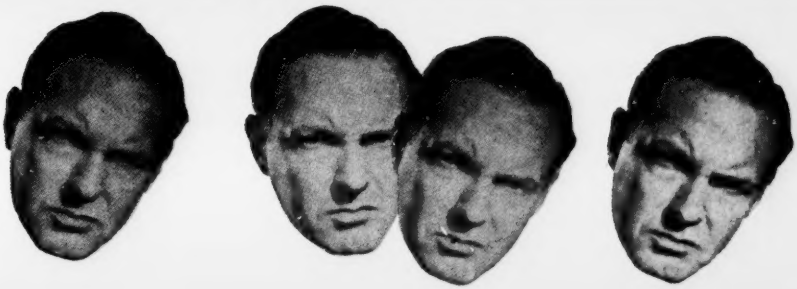
RELIEF OF PAIN

relief within minutes
no metabolic transformation — no analgesic lag

outstanding tolerance
no gastric upset, nausea or skin rashes reported

margin of safety
no secondary, possibly toxic derivatives — no adverse effects on prolonged use noted

sustained action
relief for as long as 4 hours



PAIN RELIEF + SEDATION

non-barbiturate, non-narcotic

potentiated effect with minimal dosage

mild sedation for daytime use

Samples and literature upon request.

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Correspondence

Communications from the readers of MODERN MEDICINE *are always welcome. Address communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

Conditioned Habits

TO THE EDITORS: Several months ago you mentioned your constant efforts to improve the format and page make-up of *Modern Medicine*. To this end you have recently adopted the practice of printing the gist of each article in italics at the top of each page. I presume that this one-sentence summary was intended to get first call on the reader's attention. If so, I think it has failed to do so, at least in my case.

Our reading habits are so conditioned by newspaper make-up that our eyes tend to go first to the boldface title or headline. If the subject is interesting enough to the reader the eyes then go *down*—not up—to the explanatory title. Finally, if the reader decides to go on to the article itself, his eyes continue in a downward direction.

In other words, the usual trend is from the top downward, without interruption. It seems to me that your present page make-up forces the eyes to go first to the title, then *up* to the one-sentence summary, then down to the body of the article. I find this somewhat unpleasant. I wonder if other readers have the same reaction.

ZIGMOND M. LEBENSOHN, M.D.
Washington, D.C.

Transitory Tongue Plaques

TO THE EDITORS: A question was published in *Modern Medicine* (Mar. 15, 1953, p. 36) regarding the treatment of transitory benign plaques of the tongue. The consultant stated that no beneficial effect results from local therapy.

May I call your attention to my report, "Transitory Benign Plaques of the Tongue" *(Arch. Dermat. & Syph.* 56:110-111, 1947), in which I pointed out that a 1:1,000 aqueous solution of penicillin used as a mouth wash for several days will invariably clear up the lesions on the tongue. Although effects are temporary, treatment may be repeated as necessary, bearing in mind possible induced sensitization to penicillin.

CLARENCE SHAW, M.D.
Chattanooga

Treatment of Disk Syndrome

TO THE EDITORS: As wide experience has already shown, in treatment of the disk syndrome, a conservative approach—traction upon the bedfast patient—is preferable first. The failure of traction is due principally to the fact that this method is slow and quite undramatic. It lacks that psychologic ade-

(Continued on page 26)

New...

Myopone Rectal Suppositories

A new approach in the treatment of anorectal complaints

description...

Myopone Rectal Suppositories contain a special solvent-extracted wheat germ oil rich in vitamin E, with *alpha* tocopherol, in a bland, watermiscible base. Contains no cocoa butter, narcotics or local anesthetics.

action...

Promotes healing by its metabolic effect upon injured tissue. Used in the anus or in anorectal and adjacent areas it reduces swelling, relieves tension, spasm, pain.

indications...

- Hemorrhoids — internal and external
- Rectal spasms
- Anorectal discomforts
- Relieves painful anal strictures
- Anal fissures
- Drug pruritus (due to antibiotics)

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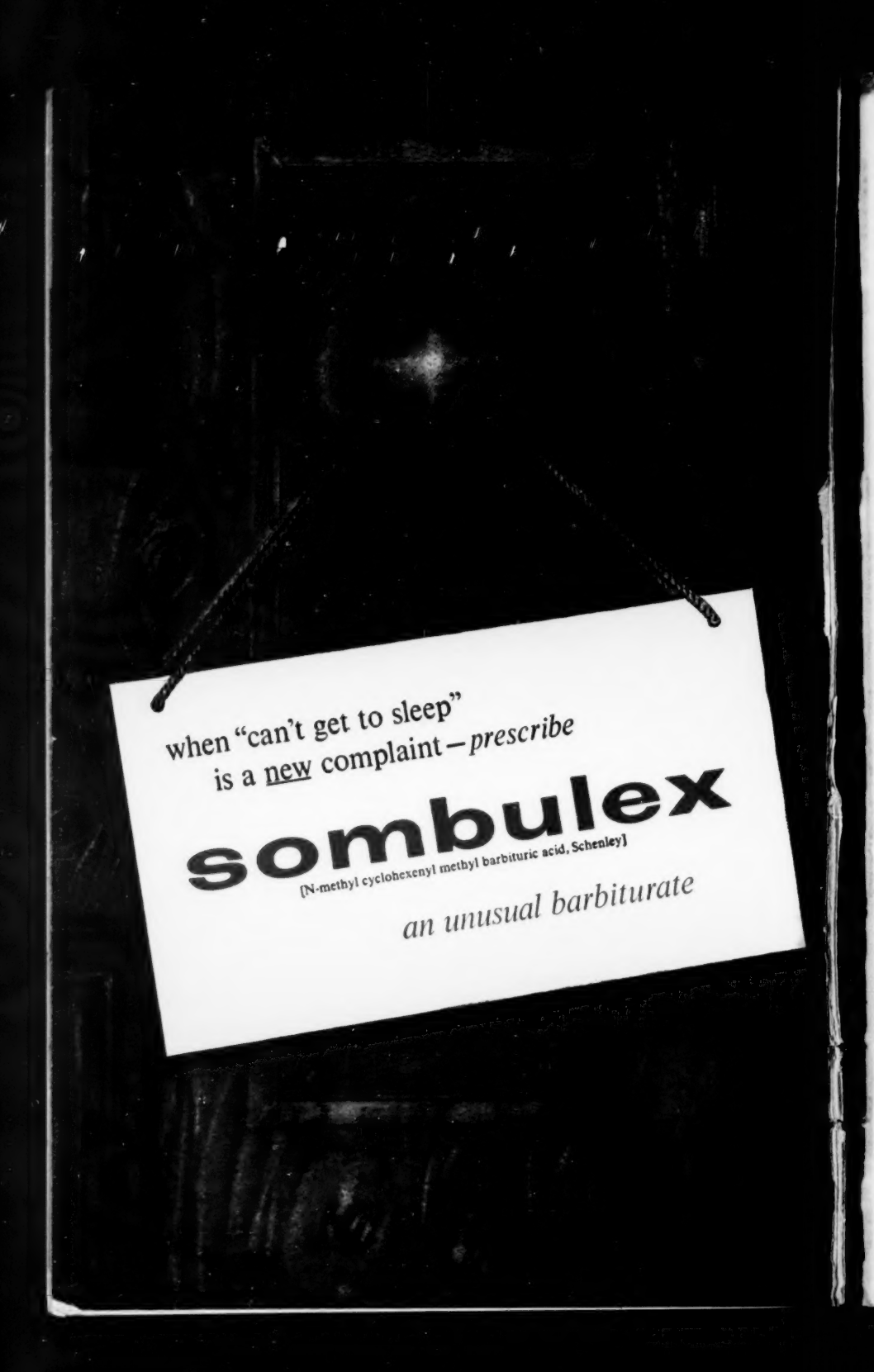
DOCTOR.....

STREET.....

CITY.....**STATE**.....


when "can't get to sleep"
is a new complaint—prescribe
sombulex
[N-methyl cyclohexenyl methyl barbituric acid, Schenley]
an unusual barbiturate

sombulex* *is an unusual barbiturate*

because it works within 15 to 30 minutes and leaves the bloodstream within 3 to 4 hours, thus avoiding the danger of hangover for patients who do not need heavy barbiturate action.

When the stresses and strains begin to tell

...when the mind won't let the body rest, and patients complain for the first time..."Doctor, I can't get to sleep"... SOMBULEX is the prescription of choice for these first-time barbiturate patients. For them, 1 or 2 tablets taken with water or a warm beverage usually suffice to induce a night's refreshing sleep without hangover. Patients will not readily identify SOMBULEX as a barbiturate.

The unusual uses of **sombulex**

Because of its rapid yet nonpersistent action, 1 SOMBULEX Tablet will help restore *interrupted* sleep without subsequent hangover, or permit a relaxing cat nap before a busy evening. One SOMBULEX Tablet also will help the new night-shift worker adjust to a daytime sleeping schedule. NOTE: The action of SOMBULEX may be too short lived for the patient already dependent upon long-acting barbiturates. SOMBULEX is supplied in bottles of 100 tablets, each containing 0.26 Gm. (4 gr.) N-methyl cyclohexenyl methyl barbituric acid, *Schenley*.

SCHENLEY LABORATORIES, INC. schenley

quacy that compels a patient's cooperation.

Inasmuch as many patients cannot endure the relatively comfortable but uneventful confinement of traction, surgery may be necessary in those cases.

The surgical approach is highly dramatic to the patient. The psychologic impact impresses upon the patient the necessity for cooperation in the process of bed rest and, of course, the surgical shock itself enforces bed rest.

It would be interesting to compare results in the following type of controlled experiment:

Taking the cases as they come, let one group be operated on for disks with removal. Let the second group be put through the same motions, but limit the actual cutting to a deep skin incision only. Keep each group confined to bed and hospital for the same length of time.

I venture the opinion that the percentage recovery will be greater in the skin incised cases, on the basis of lessened trauma to the vertebral areas involved.

THEODORE STONEHILL, M.D.
Los Angeles

Paranasal Sinusitis

TO THE EDITORS: An article entitled "Chronic Cough in Childhood" by Dr. A. Doyne Bell appeared in the March 15, 1953 issue of *Modern Medicine* (p. 118). This is an excellent article which I feel deserves some discussion in regard to the frequency of paranasal sinusitis and its treatment.

The most frequently missed, or one of the most frequently missed,

(Continued on page 31)

FOR THE
CORRECT APPROACH

OR

NOVALENE

Phenobarbital . . . . 1/4 gr.
(Warning—May be habit-forming)
Ephedrine Sulphate . 3/8 gr.
Potassium Iodide . 2-1/2 gr.
Calcium Lactate . . 2-1/2 gr.

HISTA-NOVALENE

Sodium Phenobarbital 1/4 gr.
(Warning—May be habit-forming)
Ephedrine Sulphate . 3/8 gr.
Potassium Iodide . 2-1/2 gr.
Calcium Lactate . . 2-1/2 gr.
Pyrilamine Maleate . 20 mg.

LEMMON PHARMACAL COMPANY

Division of
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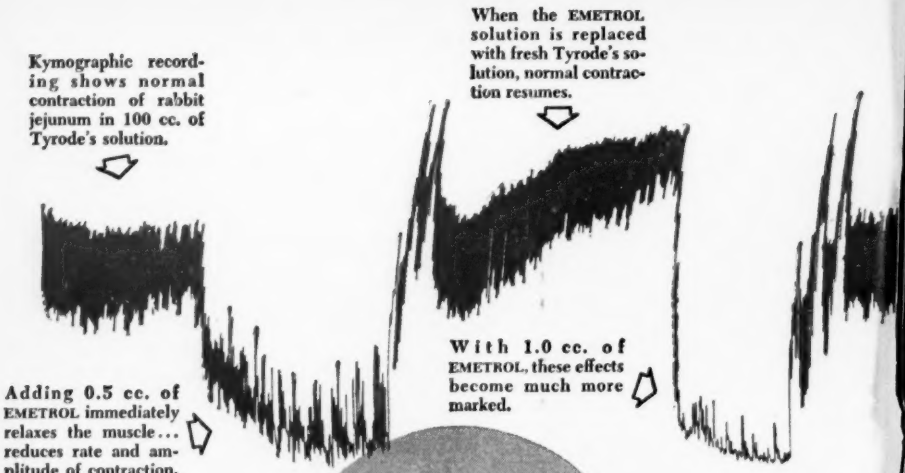


this is why EMETROL® controls

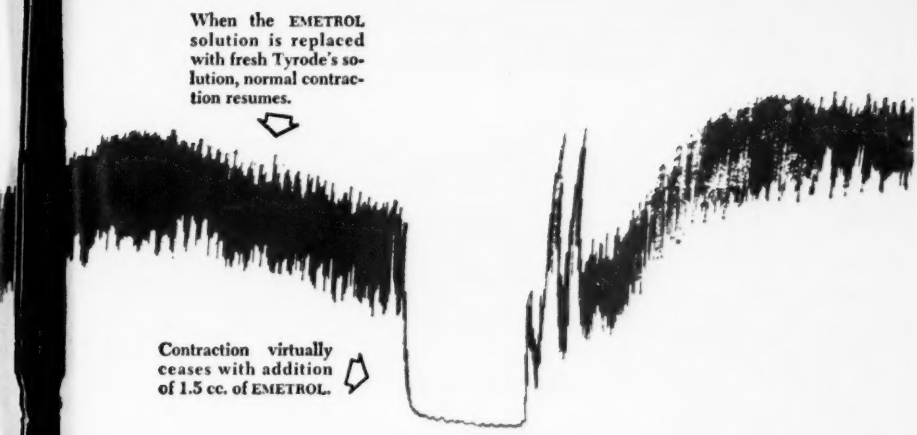
(PHOSPHORATED CARBOHYDRATE SOLUTION)

EMETROL Phosphorated Carbohydrate Solution permits effective physiologic control of functional nausea and vomiting—without recourse to antihistaminics, sedatives, or hypnotic drugs.

Pleasantly mint flavored, EMETROL provides balanced amounts of levulose and dextrose in coacting association with orthophosphoric acid, stabilized at an optimal, physio-

Kinney®

SAMPLE AND LITERATURE



epidemic vomiting physiologically

logically adjusted pH level.

Thus, EMETROL can be given *safely* —by teaspoonfuls for children, tablespoonfuls for adults—at *repeated* intervals until vomiting ceases.

IMPORTANT: EMETROL is always given *undiluted.* No fluids of any kind should be taken *for at least 15 minutes after taking* EMETROL.

INDICATIONS: Nausea and vomiting resulting from functional disturbances, acute infectious gastroenteritis or intestinal "flu," pregnancy, motion sickness, and administration of drugs or anesthesia.

SUPPLIED: Bottles of 3 fl.oz. and 16 fl.oz., at all pharmacies.

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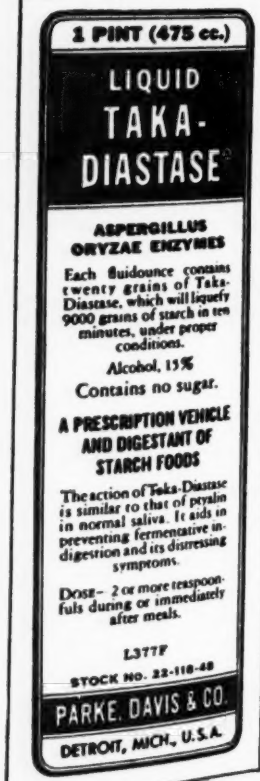
TO PHYSICIANS ON REQUEST

makes medication more pleasant

LIQUID TAKA-DIASTASE*

WIDELY COMPATIBLE

HIGHLY PALATABLE VEHICLE



LIQUID TAKA-DIASTASE provides a *pleasanter* way to give disagreeable medication. Its attractive light brown color and pleasing nut-like flavor make this product an ideal vehicle for masking the taste of unpalatable medicinal agents.

Your Parke-Davis Professional Service Representative will gladly tell you of the many useful drugs which you can "q.s." with LIQUID TAKA-DIASTASE to provide an enhanced therapeutic combination.

MEDICAMENTA VERA

Parke, Davis + Company

DETROIT, MICHIGAN

diagnoses in childhood is that of paranasal sinusitis. In the young child, the outstanding symptom is irritability with repeated awakenings from sleep to demand attention from the parents.

If the sinuses are completely blocked off, chronic cough without postnasal drip is seldom a symptom. Surgical treatment is contraindicated. Since antibiotics do not give the best result in the absence of fever, local increase of temperature must be promoted over the site of infection, in this case over the entire face. This is accomplished by having the mother run hot water in the bathtub, wringing out a hand Turkish towel and applying this across the child's face firmly, gradually increasing the temperature of the water with each repetition of application for a period of at least ten minutes, three times a day.

Mixed antibiotic therapy is given by mouth, and an antibiotic nose drop such as Furacin nasal with ephedrine is used in the nostrils following the hot compresses. This treatment should be continued for one week or until no further drainage is noticed. The mother must be informed that for the first few days her child will be apparently much worse as far as cough and nasal discharge are concerned. This is obviously desirable as it shows that drainage is taking place.

HOWARD L. EDER, M.D.
Santa Barbara, Calif.

Bartering and Ethics

TO THE EDITORS: From time to time in *Modern Medicine*, you have discussed certain phases of practical economics and practical medical ethics. Have you studied and given due consideration to the application of Section 6, Chapter 1, in *Principles of Medical Ethics*, as adopted in 1949?

Before 1949, it had been "unprofessional to accept rebates on prescriptions or appliances or prerequisites from attendants who aid in the care of patients." The *Principles of Medical Ethics* as revised in 1949 included a new sentence: "An ethical physician does not engage in barter and trade in the appliances, devices or remedies prescribed for patients, but limits the sources of his professional income to professional services rendered the patient." This revision was accepted by the House of Delegates under heading "Report of Councils" and was not open for discussion before a reference committee. It does not by any means reflect the desires or ideals of the grassroots membership. Official interpretations have been very broad and a large number of ethical physicians can be branded as unethical, particularly if any element of profit is involved.

Since December 1949, I have been active in the movement to have this section revised to be practical and acceptable to the structure of medical practice throughout the country.

At the present time, by directions of the House of Delegates of the AMA, the Council on Constitution and Bylaws, Dr. Louis Buie of Rochester, Minn., as chairman, is studying this section to clarify

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controversial portions. Dr. Buie has asked for suggestions from the membership of the AMA to help him and his council in this difficult task. I have sent him my suggestions in which I recommend that the whole section be divided into four separate new sections. The pertinent new sections, as submitted by me, read:

Section 7: The acceptance of any rebates on prescriptions or appliances or of commissions from attendants who aid in the care of patients is unethical.

Section 8: An ethical physician may furnish remedies, devices or appliances as a service or convenience to patients, but he must avoid secrecy, coercion, and unfair or unjustified financial gain.

It has always been necessary, advisable, and ethical for doctors to provide certain appliances and remedies to patients which would be difficult, inconvenient, or impossible to procure otherwise, such as proper fitting of diaphragms, pessaries, and similar devices. This bartering and trading is an essential part of the setup for practicing medicine in many localities.

As long as this bartering is a service to the patient, is known to the patient, is not forced upon the patient, and has not been used to the patient's detriment for unfair and unjustified financial gain, it should be considered ethical.

The *fact* of bartering and trading is not unethical; *abuse* to the detriment of the patient is unethical. A doctor who exploits his patients either by excessive fees or by unfair profits on remedies furnished his patients should be censored, although not for the bartering, per se.

THOMAS J. VANZANT, M.D.
Houston

Questions & Answers

All questions received will be answered by letter directed to the petitioner; questions chosen for publication will appear with the physician's name deleted. Address all inquiries to the Editorial Department, MODERN MEDICINE, *84 South Tenth Street, Minneapolis 3, Minnesota.*

QUESTION: Is politzeration safe and effective in the treatment of eustachian tube obstruction and inflammation? What is the technic?

M.D., Arizona

ANSWER: *By Consultant in Otolaryngology.* The indications for and the interpretation of the passage of air through the eustachian tube require considerable experience in otologic problems. An outline of the procedure may be found in detail in the textbook *Fundamentals of Otolaryngology* by Lawrence R. Boies and associates, published in 1949 by W. B. Saunders Company, Philadelphia.

QUESTION: After a bilateral vasectomy three months ago, a 30-year-old man developed a tender, firm mass in the left side of the scrotum which seems to be the proximal end of the severed vas. The patient feels some discomfort when working hard. Surgery presented no complications. What could cause this mass? Do you advise resection or should conservative measures be used?

M.D., Arizona

ANSWER: *By Consultant in Urology.* If "proximal end of the severed vas" means the testicular end, the mass could be a collection of sperm with a fibrous capsule around it. If the other end, a granuloma or neuroma is more likely.

Whether something should be done depends primarily upon how much discomfort is caused and whether the mass grows. If a good deal of discomfort is caused or if the size increases, excision should be done for relief and for histologic examination. If the mass remains constant in size and causes little distress, I recommend observation.

QUESTION: Is a patient with a healed posterior myocardial infarction considered to have a good heart? What causes a person with chronic myocardial infarction to have recurrent attacks of substernal pain upon exertion and sometimes at rest?

M.D., Massachusetts

ANSWER: *By Consultant in Cardiology.* In the literal sense of the word, a patient with a healed posterior myocardial infarction is not considered to have a good heart. However, some patients have outlived their expectancy with a good functional capacity of the heart most of the time.

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Forensic Medicine

ARTHUR L. H. STREET, LL.B.

Prepared especially for Modern Medicine

PROBLEM: A doctor operating a private hospital permitted a victim of a railroad accident to remain in his hospital for many months, ostensibly for treatment necessitated by the accident but really with fraudulent intent to enable her to recover heavier damages from the railway company. The damage claim was settled by the company. Was the doctor entitled to collect more than a reasonable charge for services and hospitalization reasonably and necessarily incurred and untainted by attempt to defraud the railway company?

COURT'S ANSWER: No.

The Texas Court of Civil Appeals, Waco, decided: If, as appeared to be the case, the patient had recovered in about two weeks, her longer stay under the doctor's care for the purpose of defrauding the company precluded him from collecting for the extra stay. The court intimates that the doctor could collect for the care and treatment the patient received and needed, unless the scheme to defraud existed when she was received as a patient and did not originate after the need for care and treatment ended (254 S. W. 2d 543).

PROBLEM: A 32-year-old patient had long suffered from schizophrenia with hebephrenic and paranoid features and progressive mental deterioration. After his father had him treated in several institutions he was committed to a state hospital. Thence he was paroled to a neurologic institute and the father, on the recommendation of an outside physician, consented to administration of shock treatments to the son. The patient's legs were broken in the treatment. A suit was brought for the patient by his guardian. [1] Could the doctors who operated the institute be liable in damages on the ground of constructive assault and battery, on a theory that they unauthorizedly administered the shock treatments? [2] Could negligence in administering the treatments be inferred under the circumstance detailed below?

COURT'S ANSWERS: No.

The California District Court of Appeal, Second District, decided (246 Pac. 2d 710): [1] The doctors were justified in relying upon the consent given by the father, in line with his legal liability under California law for the care of an adult child not physically and mentally able to care for himself. [2] The fact that the patient's legs were broken in the course of the treatment did not raise a presumption that the treatment was negligently administered. There was no defect in the machine for which the doctors could be blamed. The convulsion which was produced was the indispensable element of the shock treatment.

The court approvingly quoted the trial judge's comment upon the necessity for expert testimony—ab-

sent in this case—to show whether fractures of bones are an accepted hazard of electroconvulsive therapy and whether fractures occur despite use of good standard practice. Expert testimony is needed to show the manner in which such treatment is given, the purpose and effect, and what is likely to occur. Laymen jurors are not supposed to know what mental and physical effects may result.

Supporting the conclusion that the accident did not raise a presumption of negligence, the California court cited a decision by the Tennessee Supreme Court in another suit for injury growing out of shock treatment (192 S.W. 2d 992).

PROBLEM: In a suit for malpractice in operating on an arm for exostosis, the jury concluded from supporting evidence that defendant doctor was not negligent in the use of instruments, but that he was careless in failing to search the interosseous branch of the radial nerve, which he severed, erroneously believing that it had been retracted in the separation of muscle fibers. Another doctor, who later treated the patient, testified that the nerve was readily distinguishable from surrounding tissue. Defendant admitted that the injured nerve branch should be readily visible if exposed, since it was not obscured by blood. Was a damage award in favor of the patient properly allowed?

COURT'S ANSWER: Yes.

So decided the Wisconsin Supreme Court (50 N.W. 2d 686).

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References:

1. Slinger, W. N., and Hubbard, D. M. (1951), Arch. Dermat. & Syph., 64:41, July.
2. Slepyan, A. H. (1952), Ibid., 65:228, February.
3. Ruch, D. M. (1951), Communication to Abbott Laboratories.

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PROBLEM: A statute authorized suspension or revocation of a medical license for gross malpractice resulting in permanent injury. A license was revoked upon a medical board's conception that, if the doctor had proclaimed himself one of the world's most skillful plastic surgeons, his malpractice resulting in permanent injury necessarily constituted gross malpractice, whereas had he professed no extraordinary skill he would have been guilty of only ordinary malpractice. Did the board err in this interpretation of the statute?

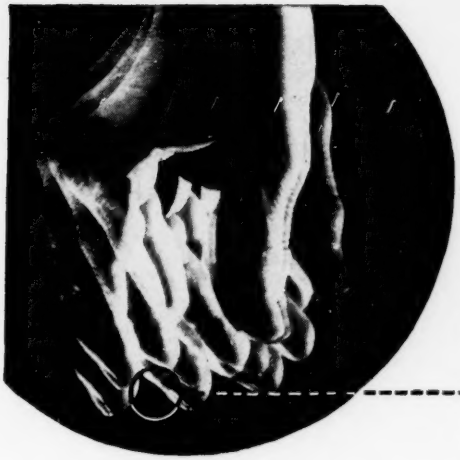
COURT'S ANSWER: Yes.

In a decision rendered in 1933 under then existing statutes, the Illinois Supreme Court reasoned that if the rule laid down by the board prevailed, "the degree of . . . skill required . . . of a physician . . . might be made to depend upon the extravagance or boastfulness of his statements as to his skill and ability" (187 N. E. 921).

¶ The opinion of the Illinois court is not to be understood as meaning that no more care and skill is required of a professed specialist than of a general practitioner. The "ordinary" care and skill required of each depends upon the separate standards of specialists and general practitioners. But we find no court decision that contradicts the Illinois court's ruling that a specialist is not legally guilty of *gross* malpractice in administering treatment or surgery that would amount to only ordinary negligence if administered by a general practitioner. *Ordinary* skill and care by a specialist may be of higher quality than ordinary care and skill by a general practitioner, but failure to use it does not necessarily spell *gross* negligence according to special practice standards.

Two decisions are interesting: The Indiana Appellate Court has noted that, in malpractice cases, juries are not free to establish standards of care exacted of doctors; they must be governed by expert testimony (14 N. E. 2d 727).

The Ohio Court of Appeals, Lucas County, has declared: "While a spe-



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cialist is held to the exercise of more skill and the possession of more knowledge within his field than a general practitioner, it is not true that he is held to a . . . special degree of care" (166 N. E. 145).—A.L.H.S.

PROBLEM: The New Hampshire workmen's compensation act requires an employer to furnish reasonable medical and hospital services "during the first 90 days after an injury to an employee." When does the ninety-day period commence to run—when the injury occurs or when it is apparent that medical attention is needed?

COURT'S ANSWER: When the injury occurs.

The New Hampshire Supreme Court dealt with a case in which an employee was injured in October 1948. He was given immediate but ineffectual medical treatment at the expense of the employer. Except for three weeks' rest, he remained at work for two years, when roentgenograms disclosed a ruptured disk of the lower spine. The condition was traced to the accident and was surgically treated. The court decided that the employee was not entitled to an allowance on account of the belated surgical expense.

Involved in interpretation of the statute was a provision authorizing extension of the ninety-day period in appropriate cases, on order of the commissioner of labor. But apparently no such order had been applied for or granted (92 Atl. 2d 916).

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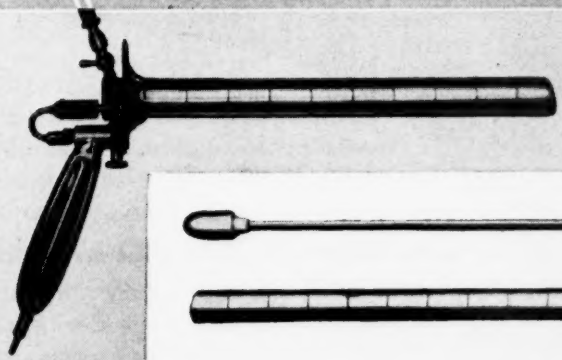
*"A Sigmoidoscope with Proximal and Distal Illumination", Surgery, Vol. 25, No. 4, April 1949.



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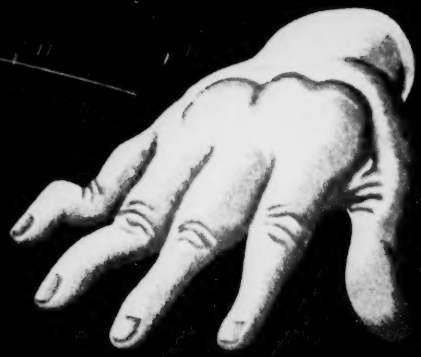

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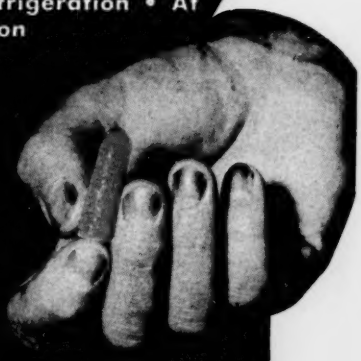

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Washington LETTER

Indian Health Problem Up for Critical Review

AMONG problems pressing in on this Congress for solution is that of the American Indian, who lives under conditions so bad that the death and disease rate is about as high as that of a half-civilized country.

Two years ago a group of states with large Indian populations formed a temporary association to try to interest Congress in legislation at least to improve the native Americans' health conditions. They proposed that responsibility for the Indians' health be transferred from the Department of the Interior's Indian Bureau to U. S. Public Health Service. The states' representatives did some lobbying, but failed to get hearings scheduled in either House or Senate.

"Yeah, this is Dr. Jones. All-Nite Pharmacy? Is it okay to fill whose prescription?"

At that time some leaders in Public Health Service lent tacit if not official support to the idea.

Now the subject is to the front in Congress. The House Interior Committee already has held hearings on the legislation, and at this writing Senate hearings are about to be scheduled. The lobbying strategist is Dr. Arthur J. Chesley, health officer for the state of Minnesota, whose great energy and familiarity with the problem make him a fine choice. A younger or lesser man might easily grow weary with the delays, stalls, and double talk that somehow have ensnarled this piece of legislation.

The following facts have been laid before Congress:

- The federal government is under legal as well as moral obligation to provide medical care, including hospitalization, for somewhat less than half a million Indians.
- Giving these Indians medical care are 153 physicians or a ratio of about 1 for every 2,500 Indians, in contrast to the national ratio of 1 physician for every 730 persons.
- Servicing the Indians are 60 hospitals, some so small and isolated

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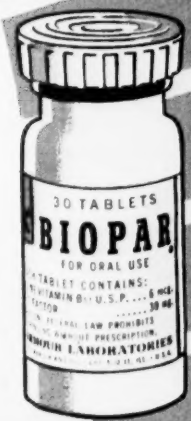

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Biopar should also be useful in:
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Biopar tablets may be used as replacement or supplementary therapy in the following conditions where injectable vitamin B_{12} has been shown to be effective:

Polyneuritis
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Composition:

Each Biopar tablet contains:

Crystalline Vitamin B_{12} U.S.P.	6 mcg.
Intrinsic Factor	30 mg.

Supplied:

In bottles of 30 tablets.

References:

(1) De Marsh, Q. B.: Personal Communication, 1952; (2) Limarzi, L. R.: Personal Communication, 1952.

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PHYSIOLOGIC THERAPEUTICS THROUGH RESEARCH

that they haven't been staffed in years. Partly, but not entirely, because of the geographic factor, no Indian Service hospitals are accredited for internships or residencies.

Disease rates among the Indians are so high that more, not less, medical service is needed than for the rest of the population, if they are ever to be brought up to the general level. For example, the House Committee was told that the infant mortality rate among Indians is 8 times higher and the tuberculosis rate 14 times higher than among the rest of the population. The average life span of the Indian is 50 years; of the rest of the population, 68.

For reasons that are not convincing to all interested representatives and senators, the new Department

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Now available, for functional constipation

A significantly new development

. . . a safe, effective peristaltic stimulant without side effects

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ISOCRIN

Diacetylhydroxyphenylisatin (Harrower) is supplied as a 5 mg. tablet for single-dose laxation. It is prompt, non-irritating and completely free from side effects because there is no systemic absorption.

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In tablet or liquid form combines the isatin principle, as represented in Isocrin, with balanced proportions of methylcellulose for moist bulk. Clinical results indicate that the combination exceeds, in therapeutic effect, the acknowledged advantages of methylcellulose alone.

Isocrin is usually prescribed for acute or occasional needs, while Prulose Complex is indicated for physiological correction where the added advantage of a bulking agent is desired. At times Isocrin is used to precede or supplement corrective therapy with Prulose Complex. Used together or separately according to circumstances, the two products offer complete flexibility and professional control of dosage for every conceivable laxative requirement.

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of Health, Education and Welfare is this year opposing transfer of the Indians' health problems to U. S. Public Health Service, which is a part of the Department.

In a statement to the House Committee, Secretary Hobby said that placing health matters in Public Health Service and leaving education and welfare in the Indian Bureau would create "administrative problems." Sponsors of the plan reply that this objection is merely administrative and should not be allowed to interfere with enactment of the bill if the net result will be an improvement in the Indians' medical care. It has also been noted that a dozen different government departments—including Defense, Agriculture, and Veterans Administration—are involved in various health, education, and welfare programs. Red tape occasionally accumulates, but never in sufficient quantity to halt the services for very long.

Appearing for Mrs. Hobby at the House hearings was the Deputy Surgeon General, Dr. W. Palmer Dearing, who talked more about changes that should be made in the bill if it is enacted than about reasons why it shouldn't be enacted.

No effort was made at the hearing to disprove the basic reason for proposing the bill: The fact that even under the worst circumstances the Indians would be almost certain of receiving better medical care

from the Public Health Service than from the Indian Bureau.

Not mentioned at the hearing were several other reasons that may have a lot to do with opposition by the department. Until the Doctor Draft Law came along and young physicians learned that military obligations could be discharged by a tour of duty in Public Health Service, PHS, which now supplies two-thirds of the Indian Bureau doctors, often was desperate for personnel. Some officials naturally are fearful that when the emergency eases and the draft law is lifted, the service again will be hard put to carry out present obligations.

Down the years Congress has been notoriously niggardly with the appropriations for the Indians. Here again is the fear that PHS might become saddled with an overwhelming responsibility but not enough personnel or money to maintain the Indian medical service at the admirable level PHS has set for itself.

The House-approved budget for the Indian Bureau for next year is evidence that this factor must be given some thought. For medical care of the Indians, the House proposed just about the same amount that is being spent this year, despite the unchallenged fact that the Indians' health is a national disgrace.

Another factor that may bear on the position of Mrs. Hobby and her

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1. Lewis, J. M. and Cohlan, S. Q.: M. Clin. N. A. 34:413, March 1950.

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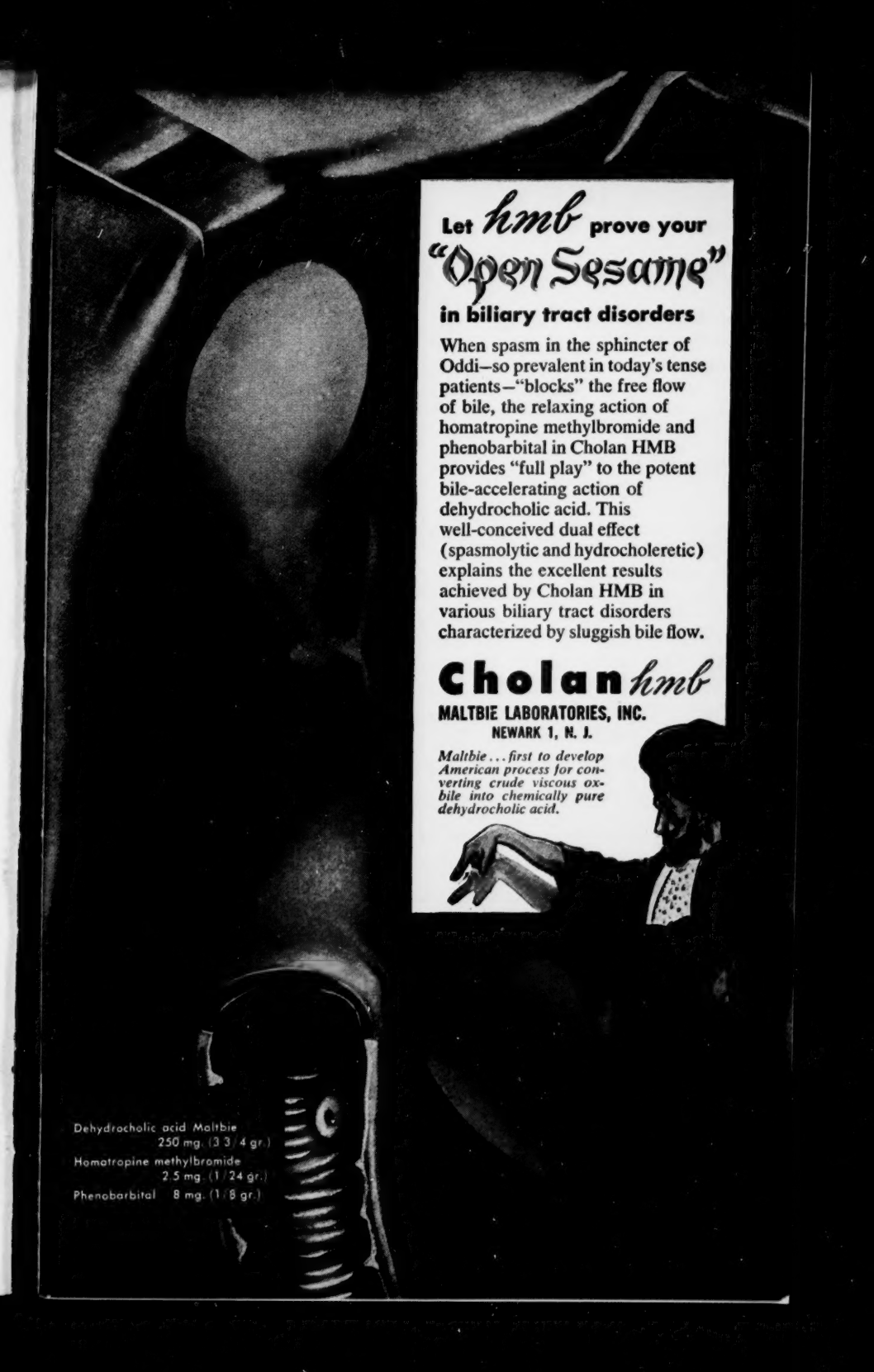
department was touched on, but only lightly, by the chairman of the House committee, William H. Harrison (R., Wyo.). During Dr. Dearing's testimony he commented that "it might be a good idea" to turn over to the department all Indian problems in the fields of health, education, and welfare.

If this is anticipated, it would be one good reason, of course, why Mrs. Hobby wouldn't want to take over only part of the responsibility now and perhaps spoil any chance of taking it all over at a later date.

Washington Notes

¶ As expected, the Department of Health, Education and Welfare was able to slice only a small amount from the budget prepared by the Truman administration for the old Federal Security Agency. The overall cut was about 1%. Hardest hit among health programs was the Hill-Burton operation. The usual $75 million for grants to hospitals

"If you should need anything, Mr. Potter, just press that thingamabob behind you."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was cut back 20% to $60 million. However, Senate or House probably will be more liberal and add on a few more millions. Also deeply reduced were budgets for various institutes of health. There is no reason to expect, however, that the lawmakers (up in the dangerous ages themselves) won't do what they usually do and bring up grants for cancer and heart research by substantial amounts.

¶ For some time, Defense Department has been under pressure to reduce or eliminate its free medical care for civilian dependents in areas where good private care is available. A commission now is studying the problem, but don't expect anything drastic. All indications are that the report will be a mild one.

¶ Rep. Olin Teague, Texas Democrat, is venturing in an area where few politicians care to be found. He is proposing that Veterans Administration be given new authority to [1] decide when a veteran can afford to pay for his non-service connected illnesses or disabilities, and [2] collect what it can when the man has the means. Under present law the veteran himself decides whether he can afford to pay, and his word can't be questioned by VA. Also, VA is not now authorized to collect money from patients.

¶ Sen. James E. Murray, Montana Democrat, hopes for some action on his bill for a national campaign against leprosy. The legislation proposes the construction of 5 new leprosariums and would improve arrangements for care of patients, including a system for treatment by private physician at government cost.

Doctor to Doctor

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The June 15 winner is

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"All I said was, 'Come in to see me. We can carry on at the office.'"

what *are your patients asking*

"Should I use these green products? What about tooth pastes, tablets, etc.? Do they really deodorize? Can I take too much? What benefits should I expect?"

No matter what the questions, chances are that most every patient will call it "Chlorophyll." You, of course, are more familiar with the scientific facts and realize that it is the water-soluble chemical derivatives of chlorophyll which are the effective agents whether for deodorizing, wound healing or other medical uses. Presently accepted terminology for these derivatives is chlorophyllins or chlorophylls.

As penicillin derives from the mold, as amino compounds derive from ammonia – so do water-soluble chlorophylls derive from oil-soluble chlorophyll found in nature. In the process of evolution, the end product takes on characteristics which definitely increase penetration and make better contact with odors and tissues.

What about mouth and breath odors?

In answering your patients' queries, you may safely tell them that there is ample scientific evidence that chlorophyll derivatives *do* deodorize.

Because of the wide publicity given tooth pastes, tablets, and lozenges containing chlorophylls and suggested for deodorization, these are often the first uses to be questioned. Mouth odors of strictly local origin developing from putrefying food particles in the mouth are the chief offenders. Other causes of offensive odors in the mouth may be putrefying saliva, pyorrhea, caries, or other pathological conditions. It is generally agreed that if cholorophylls are to be effective deodorizers, they must come in direct contact with the source of the odor. Thus chlorophyll-containing tooth pastes and mouth washes and "mint type" lozenges to be held in the mouth are a practical form of administration. Breath odors of systemic origin can be neutralized only by ingestion of chlorophylls and not by treating the mouth alone. If failures occur it is probably due to not reaching the source of the odor, to the use of inactive materials such as oil-soluble chlorophyll, or to inadequate dosage of water-soluble chlorophyll for the condition involved. If the source of the odor remains in the mouth, repeated application of chlorophylls is necessary for deodorization.

In a carefully controlled comparison, Harrisson found that chlorophyll-containing chewing gums and lozenges reduced mouth odors from onion, beer, and cigarette smoking quicker and more effectively than did similar products without chlorophylls.

What about over-dosage?

Through all the history of the use of chlorophyll and chlorophyll derivatives there have been no reports of toxicity regardless of route of administration – topically, internally, or intravenously.

In laboratory tests on animals it has been demonstrated that on a comparable weight basis, man can tolerate a single oral dose of over 200 grams of high potency chlorophylls. Since usual dosage found in chlorophyll products taken without medical supervision is 5 to 10 milligrams per dose, there appears to be ample leeway for prescription of more concentrated dosage when indicated.

about chlorophyll?

What about normal body odors?

For combatting body odors the studies of Tebrock, of Westcott, of Taber, and of Montgomery and Nachtigall offer good positive evidence of the effectiveness of chlorophyll derivatives. When professional consideration of the psychic and social effects of offensive body odors influence medical recommendations, Tebrock's industrial plant studies are of particular interest, 567 subjects took two chlorophyll tablets daily, observed usual personal hygiene, but used no other deodorants. In 66% menstrual odor was obliterated, in 87% breath odor was helped, in 78% perspiration odor benefited, and in 62% foot odor was relieved.

Taber completely eliminated lochial and menstrual odors in a high percentage of women tested by divided doses of four chlorophyll tablets daily. Deodorization continued five to twelve hours after the last dose. Westcott's concern with the effect of chlorophyll fractions on body and breath odors resulted in evidence that they effectively neutralize obnoxious odors from perspiration due to physical exercise, nervousness and illness, from foot odors, menstrual odors, and urine odors. Montgomery and Nachtigall confirmed Westcott's work using 200 mg. of water-soluble chlorophyll a day and reduced odors from pathological conditions with a 300 mg. daily dosage.

What about odors from pathological conditions?

Other investigators, too, have used chlorophyll fractions with success to combat odors concomitant to pathological conditions which cause disagreeable fecal odors or are odorous of themselves due to suppuration or putrefaction. Goodman, Astler and Morley, Joseph, and Weingarten and Payson have all eliminated fecal odors due to colostomy in a wide range of patients. Gruskin reported prompt disappearance of odor even in cases of ulcerative carcinoma. His complete work covered 1200 foul smelling lesions on which chlorophylls were used to promote wound healing. Positive results with water-soluble chlorophyll in wound healing are so well documented that space does not permit a full discussion here.

Want to read more on chlorophyll?

Complete bibliographic references for all studies mentioned here are published in "CHLOROPHYLL 1953" by Dr. Walter H. Eddy. On these pages is only a part of the story on chlorophyll. We hope to be able to tell more in subsequent issues. In the meantime, why not send for your FREE COPY of this completely documented, authentic review of all the research literature on chlorophyll from Joseph Priestley in 1772 to date? 60 pages, 156 references. The supply is limited, so write at once to:

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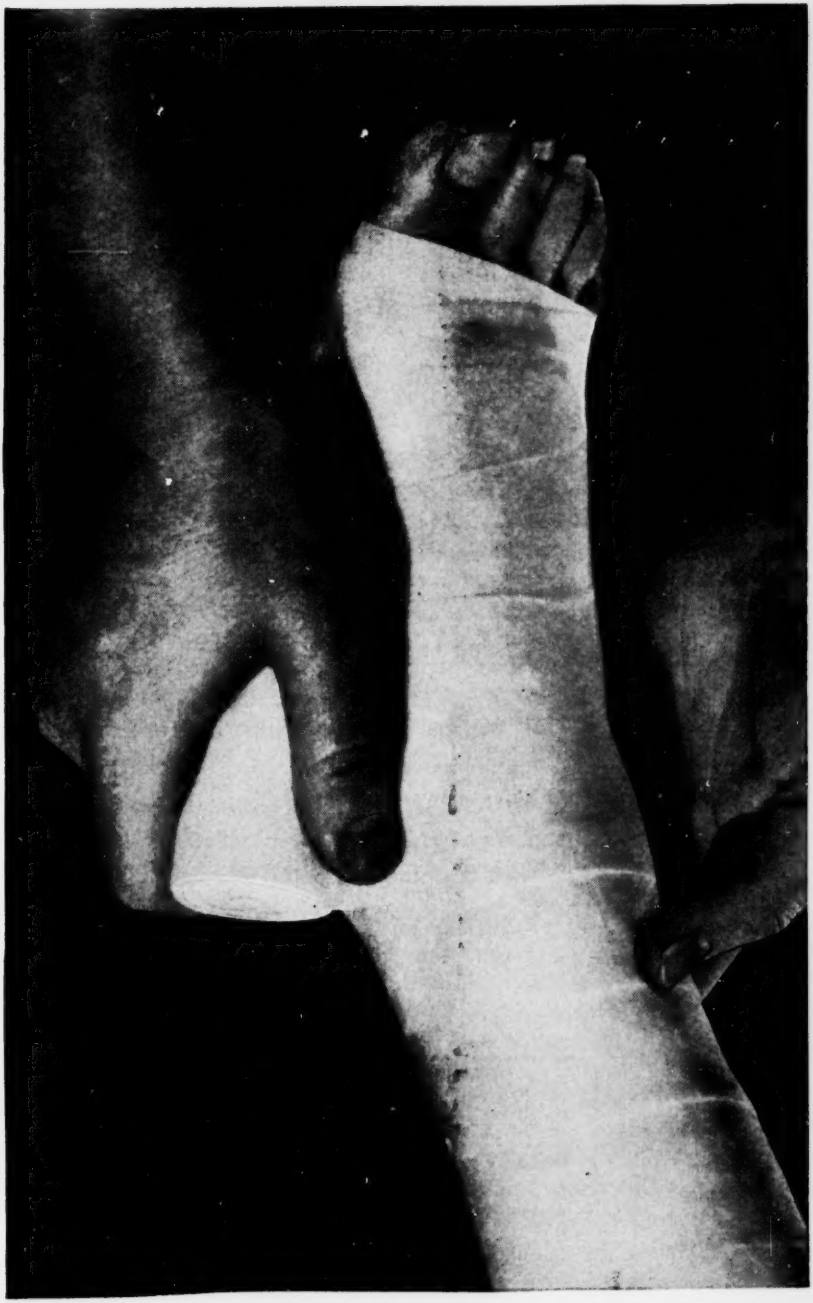

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MODERN MEDICINE
THE JOURNAL OF DIAGNOSIS AND TREATMENT

THE EDITOR'S PAGE

by WALTER C. ALVAREZ, *Editor-in-Chief*

The Art of Writing Medical Reports

Many of the medical reports that physicians receive each month from consultants are unsatisfactory and disappointing because all they contain is a brief summary of the results of the tests. When these tests show nothing wrong, the referring physician has little to help him in making a diagnosis, or giving a prognosis, or outlining a course of treatment.

Unfortunately, today, when a consultant receives negative reports from the laboratory people, the roentgenologists, and the special examiners, he often feels that his job is done. "There is nothing wrong with the patient," and that is that.

But it would seem that, in many cases, when the examination fails to show anything, the consultant's job should really begin. He should try to contribute something toward a diagnosis. He might try to find out why the patient seeks help.

To illustrate: The other day there came reports from several able consultants who had examined a thin, sickly, anemic, dark-complexioned man who was thought by some of his home physicians to have Addison's disease and by others to have addisonian anemia. Curiously, no one had pumped the fellow's stomach to find whether it contained hydrochloric acid. In regard to Addison's disease, a good study showed no sign of disease in the suprarenal glands. But when the consultants had established this fact they stopped and did not go on to say what was the trouble with the man.

Actually, a chat with the family would have shown that, like his father before him, the patient was mentally depressed. He had failed to eat because he was mentally disturbed, and his

anemia was apparently due to severe and prolonged malnutrition. A mild psychosis accounted for most of the weird symptoms and the man's feelings of great weakness and fatigue. His dark color resulted from the fact that, with emaciation, his skin had shrunk and the pigment cells had thus come close together.

In graduate schools in which physicians are now being trained to be diagnosticians and consultants, a lecture or two might well be given on the writing of really helpful and adequate reports to the doctor who refers a case.

Unexplained Fever

Because a slight fever in an adult who is not very ill can often be extremely puzzling, it is well to remember that occasionally such a fever can be due to a drug. I once reported the case of a woman who used to get sudden spikes of high fever. After months of treatment for malaria and what not, a little study showed that the fever was due to the taking of aminopyrine for menstrual pain. In another case a man who occasionally had attacks of fever with severe pain in his legs was found to be chewing gum containing phenolphthalein. When he quit this, he lost his fever.

Drs. O. Alan Rose, Alfred Vogl, and Arnold I. Turtz reported that some persons who are taking quinidine will have a little fever. Apparently the person becomes sensitized to the drug, so much so that while taking it he may break out with an itchy rash. The fever disappears within forty-eight hours after the drug is stopped.

More Surgery for Anginal Pectoris

Definite progress is being made in improving the blood supply of the heart that has suffered a coronary thrombosis. Surgical production of an adhesive pericarditis did not work well. A tubular flap of skin brought up from the abdominal wall through the chest and fastened to the heart appeared to bring in a good blood supply. Recently, Dr. C. P. Bailey and associates have obtained some excellent results with patients by using Beck's idea of bringing blood from the aorta, through a homotransplanted segment of artery or vein, to the venous coronary sinus and on into the "swamp" of small blood vessels of the heart. Unfortunately, in a few cases, because of an anatomic peculiarity, the operation is not feasible.

Streptomycin with isoniazid or PAS is more effective against tuberculosis than either is alone.

Isoniazid Treatment of Tuberculosis

TUBERCULOSIS CHEMOTHERAPY TRIALS COMMITTEE
OF THE MEDICAL RESEARCH COUNCIL
England

STREPTOMYCIN and isoniazid in combined therapy are highly effective against tuberculosis over a three-month period. However, the superiority of the combination to that of streptomycin with PAS is not great, reports the Tuberculosis Chemotherapy Trials Committee of the British Medical Research Council, after a study of 364 patients with pulmonary tuberculosis.

Other conclusions are:

None of the three drugs, isoniazid, streptomycin, or PAS, should be used alone in the treatment of pulmonary tuberculosis. Whenever possible, the drug sensitivity of a patient's organisms should be tested before chemotherapy is started so that a potentially effective combination for that particular patient may be selected and any unsuitable combination of drugs avoided. Further sensitivity tests should be routinely done for every patient who still has bacteriologically positive sputum after completing a course of chemotherapy.

The 364 patients were treated in 40 hospitals for three months. Three main types were noted: [1] patients with acute, rapidly progressive disease of recent origin, [2] those with other forms of the disease suitable for chemotherapy, and [3] those with chronic disease considered unlikely to respond. These cases of severe and less severe disease were equally distributed among the treatment courses. Therapy was determined by random allocation so that the physician did not know which treatment the patient would receive.

When these schedules are employed for three months, the general condition of most of the patients improves, but the differences between the results of the three types of treatment are small. The patients given streptomycin and isoniazid fare slightly better than those given streptomycin and PAS. Weight gains are strikingly better for patients given streptomycin and isoniazid or isoniazid alone. For lowering the temperature of pyrexial patients and lowering sedimentation rate, streptomycin and isoniazid is the most effective.

Little difference in radiologic response is noted between patients given streptomycin and isoniazid and those given streptomycin and PAS, but the response is better than for those receiving isoniazid alone. The proportions of patients with bacteriologically negative spu-

Isoniazid in the treatment of pulmonary tuberculosis. Brit. M. J. 4809:521-536, 1953.

ta on direct examination and on culture after the three-month period is 67% for streptomycin and isoniazid treatment, 55% for streptomycin and PAS, and 37% for isoniazid alone.

The combination of streptomycin and isoniazid in the dosage studied is as effective for three months in preventing the development of streptomycin resistance as of isoniazid resistance. Streptomycin and isoniazid is as effective as streptomycin and PAS in preventing the emergence of streptomycin-resistant bacilli. Patients with initially streptomycin-resistant organisms are apparently not protected from the risk of isoniazid resistance by streptomycin and isoniazid treatment. Patients with PAS-resistant organisms are not protected from streptomycin resistance by combined streptomycin and PAS.

Anticlotting Therapy for Myocardial Infarction

HENRY I. RUSSEK, M.D., AND BURTON L. ZOHMAN, M.D.

ANTICOAGULANTS are not necessary or desirable in every case of acute myocardial infarction. Little or no benefit from anticoagulant therapy can be expected for a patient having a first attack if no serious prognostic signs are noted by examination.

A questionnaire on the subject was sent to several hundred specialists throughout the United States by Henry I. Russek, M.D., of the U. S. Public Health Service Hospital, Staten Island, N. Y., and Burton L. Zohman, M.D., of the State University of New York, Brooklyn.

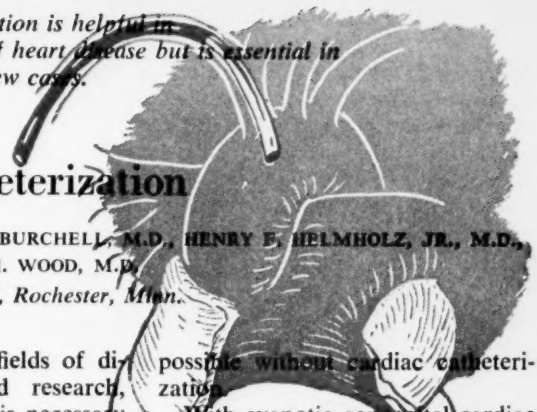
Of 228 physicians who replied, more than half disavowed routine use of anticlotting agents in cases of acute myocardial infarction. Serious hemorrhagic complications with such treatment were mentioned by 104 of the physicians, and 64 reported 122 deaths from bleeding.

Indications commonly accepted by the physicians for anticoagulant use were a previous cardiac infarction or extensive involvement, enlarged heart, arrhythmias, congestive failure, profound or persistent shock, intractable pain, varicosities, previous thrombophlebitis or phlebothrombosis, debility, lethargy, obesity, diabetes, polycythemia, or any departure from a smooth course. The replies differed as to whether old age was a reason for or against treatment.

Nonmedical factors sometimes influencing a doctor to employ anticoagulants are pressure from the patient's family or referring physician, publicity given the method, and fear of criticism or a law suit if treatment is withheld.

Anticoagulant therapy in acute myocardial infarction. Am. J. M. Sc. 225:8-13, 1953.

Catheterization is helpful in diagnosis of heart disease but is essential in relatively few cases.



Cardiac Catheterization

HOWARD B. BURCHELL, M.D., HENRY F. HELMHOLZ, JR., M.D., AND EARL H. WOOD, M.D.
Mayo Clinic, Rochester, Minn.

IMPORTANT in the fields of diagnosis, teaching, and research, cardiac catheterization is necessary in only a few cardiac cases. The procedure has resulted in a comprehensive reorientation of the clinician's viewpoint of the diagnosis of both congenital and acquired cardiac defects.

Catheterization should always be accompanied by a plan for cardiac resuscitation by the direct approach. Transient arrhythmias are common and paroxysmal tachycardia and auricular or ventricular fibrillation may occur.

Howard B. Burchell, M.D., Henry F. Helmholz, Jr., M.D., and Earl H. Wood, M.D., describe the following conditions in which catheterization may yield valuable diagnostic and therapeutic information:

Determination of pulmonary arterial pressure or of the type of pulmonary stenosis is important in diagnosis of cyanotic congenital cardiac cases. Multiple injections of dye through the cardiac catheter may greatly help to determine the site of the venous arterial shunt. However, diagnosis and treatment, including surgery, are sometimes possible without cardiac catheterization.

With cyanotic congenital cardiac patients, a diagnosis may be made on the basis of the site of increased oxygen saturation in the right heart. The data must be correlated with clinical findings.

Most cases of patent ductus arteriosus do not require special study. Only when patients with ventricular or atrial septal defects have atypical findings or are being categorized for future surgery is cardiac catheterization advisable.

Heart failure of infants may be caused by a patent ductus or ventricular septal defect. Catheterization may be used for diagnosis, but retrograde aortography is preferable as the first procedure in such cases.

Mitral stenosis and mitral insufficiency are hard to differentiate. However, pre- and postoperative investigation will allow better analysis of the late results of surgery. Patients with little apparent disability should not be operated upon unless pulmonary hypertension is definite and increases upon exercise.

Constrictive pericarditis may compromise either the left or right

Over-all experiences with cardiac catheterization. Proc. Staff Meet., Mayo Clin. 28:50-57, 1953.

ventricle. Pulmonary hypertension is commonly found. Constriction of the veins does not seem to be significant in this disease.

Pulmonary hypertension may be related to extensive pulmonary disease, previous pulmonary embolism, congenital cardiac defects, or pulmonary arteriolar disease. Differentiation is not always easily made even with catheterization.

A miscellaneous group of cases in which catheterization may supply valuable information are: individuals who have unusual murmurs, atypical roentgenologic or electrocardiographic findings, or peripheral arteriovenous fistulas. Some unusual cases recognized by catheterization include Ebstein's malformation, anomalous pulmonary veins, tricuspid atresia, ruptured aneurysm of the sinus of Valsalva, and persistent atrioventricular canal.

Prevention of Fatal Penicillin Reactions

SHEPPARD SIEGAL, M.D., ROGER W. STEINHARDT, M.D., AND ROBERT GERBER, M.D.

To AVOID anaphylactic shock, penicillin should be given only when necessary, if possible by mouth, and not after certain types of sensitization.

Treatment has caused at least 4 deaths, all in persons with bronchial asthma; in spite of repeated doses, only 1 had ever shown signs of allergy to the drug. A fatal and 2 nonfatal anaphylactic reactions were observed at Mount Sinai Hospital, New York City, by Sheppard Siegal, M.D., Roger W. Steinhardt, M.D., and Robert Gerber, M.D. Risks will increase with more and more exposure.

Shock does not follow the first dose but may occur after single intermittent injections. Before therapy, previous administration and reactions should be recorded, as well as other personal or family allergies.

Even a slight accelerated or immediate reaction, within minutes, hours, or at most a day or two, is a danger signal. However, the id type of erythematous vesicular dermatitis seen on hands, feet, and groin within twenty-four hours may be excepted and is not indicative of anaphylactic danger.

Contact allergy of doctors and nurses, exfoliative dermatitis, purpuric effects, or more than 1 episode of penicillin allergy in any form may be a warning. Prompt and delayed reactions must be distinguished. Serum sickness developing in one to four weeks generally indicates merely transient sensitization, and a later course may be tolerated well.

Fatal and near-fatal penicillin anaphylaxis. J. Allergy 24:1-10, 1953.

Protection against influenza is extended to two years if vaccine is emulsified in light mineral oil.

Report on Influenza Vaccines

JONAS E. SALK, M.D.
University of Pittsburgh

THE effectiveness of the influenza virus vaccines is apparently lengthened and the antibody response augmented when the virus vaccine is emulsified with light mineral oil rather than being used as an aqueous preparation.

These conclusions are made from the studies by Jonas E. Salk, M.D., of a number of medical students at the University of Pittsburgh, one half of whom were injected with vaccine emulsified in light mineral oil and the other half with an aqueous preparation containing the same quantity of virus per unit of inoculum. The vaccines contained viruses of influenza types A, A′, and B, represented by the PR8, FM1, and Lee strains, respectively.

Two years later, the level of antibody was significantly higher for the students inoculated with the emulsified preparation. The greatest effect of the emulsified vaccine appears four months after inoculation, as compared to a chief effect at six weeks for aqueous vaccine.

Although the emulsified vaccine reaches the greatest effectiveness later than the aqueous material, both preparations induce the formation of about the same amount of antibody in the first two weeks after inoculation. Thus the aqueous material has no advantage over the emulsified preparation in respect to more rapid protection.

The antititer for the emulsified vaccine declines slightly during the interval from four months to one year, after which little change ensues. However, the antititer for the aqueous vaccine drops steadily after six weeks until the level after one year is not much above that before vaccination.

The critical level for clinical immunity has not been established. Of importance is the fact that subjects inoculated with the emulsified vaccine have higher levels of antibodies both at six weeks and at one year than do subjects given the aqueous preparation. Moreover, among those receiving the emulsified vaccine, whatever difference is observed between the six-week and one-year antibody titers occurs in the subjects with the highest titers, far beyond the minimum apparently needed for resistance to infection.

The difference in prolonged immunization is apparently not caused merely by the retention of antigen for longer periods at the depot site. More valuable is the accumulation around the inoculum of cells important in antibody formation, an

Use of adjuvants in studies of influenza immunization. J.A.M.A. 151:1169-1175, 1953.

accumulation which appears to be specific to the light mineral oil used in the studies. Moreover, a water-in-oil emulsion is necessary for this action rather than an oil-in-water preparation. Apparently, a direct contact of the oil with the tissues is needed to stimulate the formation of an antibody-forming organ.

The vaccines emulsified in light mineral oil produce an antibody response for strains not present in the vaccine. For the practical prevention of disease, a vaccine must induce adequate antititers against all strains. When the emulsified preparation is used, human beings respond equally well with antibody for strains contained in the vaccine and for related but not identical strains. This does not occur with the aqueous material.

Studies thus far are limited to the results of a single injection of vaccine. The effect of reinoculation remains to be determined. The advantage of immunization with a single injection, however, is well known. The possibility of a single injection with lasting immunity or with widely spaced booster shots is encouraging.

Two major hazards in the use of emulsified preparations are: [1] formation of abscesses or paraffinomas at the injection site and [2] sensitivity to egg material because of the presence of impurities in vaccines grown on the developing chick embryo. With the use of low viscosity mineral oil and purified materials, these complications have not been encountered in the series of more than 20,000 inoculations.

Vitamin B_{12} and Pernicious Anemia

GORDON C. MEACHAM, M.D., AND ROBERT W. HEINLE, M.D.

ERYTHROCYTE levels may be maintained in pernicious anemia and neurologic or lingual lesions prevented by vitamin B_{12}.

Gordon C. Meacham, M.D., and Robert W. Heinle, M.D., of Western Reserve University, Cleveland, treated 43 persons who had addisonian pernicious anemia with varying doses of crystalline vitamin B_{12} or a concentrate containing vitamin B_{12} and B_{12b}. An average daily dose of 1 μg. given intramuscularly at intervals of three to four weeks was as effective as purified liver extract.

Slight macrocytosis often persists and is not altered by addition of intramuscular purified liver extract or oral folic acid.

The difference in the relationship of the erythrocyte level to the hematocrit value in treated pernicious anemia patients and healthy persons suggests that neither vitamin B_{12}, purified liver extract, or folic acid singly or in combination completely corrects the erythrocyte abnormality in pernicious anemia.

Maintenance therapy of pernicious anemia with vitamin B_{12}. J. Lab. & Clin. Med. 41:65-77, 1953.

First steps in management of meningitis may mean the difference between life and death.

Diagnosis and Treatment of Meningitis

MARK H. LEPPER, M.D., AND HARRY F. DOWLING, M.D.
University of Illinois, Chicago

MANAGEMENT of meningeal infection depends on early diagnosis, if possible before treatment is started, and differentiation into the specific etiologic group so that the proper medication can be selected.

A false start in treatment, especially if antibiotics are used, may suppress but not eradicate the disease, allowing the infection to progress insidiously to a fatal outcome. About 25% of patients with meningitis receive antibiotics from two to seventeen days before the diagnosis is suspected, warn Mark H. Lepper, M.D., and Harry F. Dowling, M.D.

Every patient with an infection should be examined for signs of meningitis. Lumbar puncture is done if the neck is stiff or Kernig's sign is demonstrated or if an infant has a bulging fontanelle or a low weak cry and fever.

The fluid should be examined grossly and the pressure determined. Total and differential cell counts are important. Quantitative determinations for sugar and protein are made.

The centrifuged specimen should be stained with Gram's stain and methylene blue. Typing by capsular swelling is done when pneumococci or influenzal bacilli are suspected. The fluid should be cultured. The specimen must be saved to prevent future difficulty and sent to the hospital if the patient goes.

If the leukocyte count of the spinal fluid is above 1,000 and the cells are mostly polymorphonuclears, meningitis caused by bacteria other than the tubercle bacilli is most likely. Early in the course of viral or tuberculous meningitis, polymorphonuclear cells may predominate, but the count will always be less than 1,000. Further lumbar punctures are needed in such cases. The spinal fluid sugar is low with acute bacterial infections.

When a typical purpuric rash or joint involvement is observed, meningococcic infection is most likely. In an infant under 2 with a less acute course than is usual with meningitis, influenza bacilli infection is probable, especially if pneumonia is associated. Beta hemolytic streptococcal infection should be suspected if the patient has mastoiditis.

A history of tuberculosis for the patient or family, roentgen evidence of primary tuberculosis, or tubercle bacilli in the sputum smear help establish the diagnosis of tuberculous meningitis. The cells in

Management of the patient with meningitis. GP, vol. 7, no. 2, pp. 47-52, 1953.

the spinal fluid are mostly lymphocytes and the dextrose concentration is usually lowered, as are the chlorides. Except in early infection, the proteins are ordinarily over 100 mg. per cent.

Fungal infections can be suspected when the course of lymphocytic meningitis is prolonged. Cryptococci are often mistaken for lymphocytes. Skin and serologic tests help but the diagnosis is usually made by finding the organism in the smear or culture of the spinal fluid.

Positive serologic reaction determines the diagnosis of acute syphilitic meningitis. Protozoal infections of the central nervous system are rare.

Definite diagnosis of many viral infections is difficult. Careful neurologic examination and knowledge of prevalence in the community are helpful in recognizing poliomyelitis. History of parotitis for the patient or contacts is good evidence for mumps meningitis or encephalitis.

Aseptic meningitis may be produced by an abscess impinging on the meninges; osteomyelitis of the inner table of one of the paranasal sinuses or mastoids is often associated. Roentgenograms should be made of these areas, therefore, in cases of lymphocytic meningitis of unknown origin. Similarly, chest films are important because cerebral abscesses are frequently metastases from abscesses of the lung.

Endocarditis may produce multiple septic cerebral emboli.

Meningococcic meningitis is best treated with sulfisoxazole (Gantrisin). Dosage for adults is 6 gm. initially and 1 gm. every four hours; children receive 100 mg. per kilogram initially and then 200 mg. per kilogram every twenty-four hours. Medication is given intravenously until tolerated orally. Penicillin may be given intramuscularly. The Waterhouse-Friderichsen syndrome necessitates prompt administration of adrenal hormones and plasma or blood, besides sulfonamides and penicillin.

Penicillin alone is the best drug for pneumococcic infections. Doses of 1,000,000 units every two hours are used. If the patient does not improve, the dose may be doubled and Benemid added.

Staphylococcal infections should be treated early by a combination of penicillin with either bacitracin or streptomycin until the sensitivity reports are available. Bacitracin is administered intramuscularly. Dosage for adults is 200,000 units daily; for children, 3,000 units per kilogram every twenty-four hours. Streptomycin is given intramuscularly; every twenty-four hours adults receive 4 gm.; children, 50 mg. per kilogram.

For *Hemophilus influenzae* meningitis, aureomycin, terramycin, or chloramphenicol is effective. Dosage is 500 mg. every six hours for adults, and 50 mg. per kilogram every twenty-four hours for children. The drugs are given intravenously for the first twenty-four to forty-eight hours, then orally.

This treatment is also used for other gram-negative rod infections. The coliform organisms and Friedländer's bacillus are occasionally more responsive to chloramphenicol

col than to the other 2 antibiotics. Polymyxin is administered intramuscularly in doses of 2.5 mg. per kilogram every twenty-four hours when other treatment fails.

The *Pseudomonas* group is best treated with polymyxin, although sulfonamides and streptomycin are occasionally helpful.

If the organism is unknown, penicillin and streptomycin are used except for children under 10 years old, for whom aureomycin, terramycin, or chloramphenicol is added—aiming at a possible *H. influenzae* infection.

Patients with nonpurulent meningitis should be treated symptomatically only until diagnosis is proved, unless the course is acute and fulminating or tuberculous meningitis is quite likely.

Isoniazid and streptomycin are used in cases of tuberculous meningitis. Isoniazid is given intramuscularly or orally in doses of 10 mg. per kilogram every twenty-four hours for the first week and 5 mg. per kilogram every twenty-four hours thereafter. Streptomycin is administered intramuscularly in 2-gm. doses every twenty-four hours for adults, or in doses of 25 mg. per kilogram every twenty-four hours for children, and intrathecally for at least forty-five days in doses of 25 to 100 mg. every twenty-four hours.

No specific treatment is available for viral infections. Sulfonamides are somewhat helpful in cryptococcosis, and stilbamidine may be effective for blastomycosis. Penicillin is successful with syphilis. Antibiotics are of little help in leptospirosis.

Detection of Early Diabetes

P. H. FUTCHER, M.D., AND G. SAUVÉ, M.D.

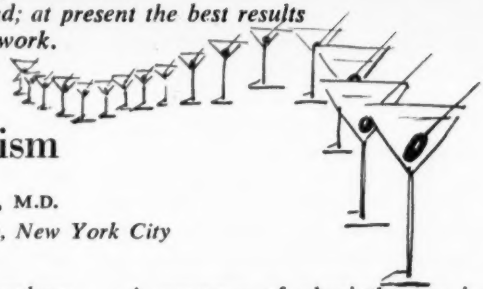
REDUCTION of Benedict's solution by urine voided two and one-half hours after ingestion of 75 gm. of glucose may be a valuable aid to discovery of diabetes mellitus.

P. H. Futcher, M.D., of Johns Hopkins University, Baltimore, and G. Sauvé, M.D., of the Hospital of the Rockefeller Institute, fed glucose to induce glycosuria to 1,000 ambulatory patients, mostly over 40 years of age, not previously suspected of having diabetes. Glucose tolerance tests for 70 of 191 patients whose urine reduced Benedict's solution revealed varying degrees of impairment of carbohydrate metabolism in 31 who manifested no elevation of the fasting blood sugar and no fasting glycosuria.

The known variation in renal threshold for sugar, excretion of nonglucose reducing substances, and emotional tension are the probable causes of false-positive results.

Detection of mild diabetes mellitus by feeding glucose to induce glycosuria. Diabetes 2:31-36, 1953.

Specific therapy for alcoholism is still to be found; at present the best results come from teamwork.



Chronic Alcoholism

CURTIS T. PROUT, M.D.
Cornell University, New York City

NO standard therapeutic procedure for alcoholism is sufficiently effective to be generally accepted and used. The magnitude of the problem is shown by the fact that the number of alcoholics in the United States rose during 1940-48 from about 658,000 to 952,000.

The most satisfactory treatment methods in use today are discussed by Curtis T. Prout, M.D.

• *Hospitalization or in-patient therapy* is based on the premise that prolonged abstinence and reeducation are required. Admitted for a period of about six months, the patient receives a thorough medical and laboratory examination and alcohol is completely withheld.

If necessary for the acute effects of withdrawal, 50 cc. of 50% glucose is given intravenously followed by 10 units of regular insulin. This dose may be repeated as often as every four hours. Vitamin B is given parenterally or intravenously each day for two weeks.

If the stomach will tolerate, 1 gm. of sodium chloride is given orally three times daily for two weeks; otherwise, 5% saline solution is given intravenously until oral administration is tolerated. Hypertonic fluids and 3,000 calories daily are prescribed, and multivitamins are given by mouth for about three months. Paraldehyde, 10 to 20 cc., affords sedation, when required.

A program of physiotherapy is begun, including stimulating douche sprays, occupational therapy with stress on continuity of effort, and psychotherapy aimed at teaching the patient that drinking is only a minor part of the problem.

• *Out-patient clinics* have been established in several states and are considered the basic unit of a rehabilitation program that involves community agencies, courts, hospitals, Alcoholics Anonymous, and members of the clergy.

Whenever possible, applicants are treated on an out-patient basis. Hospitalization is used when the patient needs medical care, relief from the immediate physical effects of intoxication, temporary and environmental change, or special adjunctive therapy.

• *Psychotherapy*, though extremely important in rehabilitation of the alcoholic, often fails because after an enthusiastic start the patient slips and becomes as bad or worse than before. If physically manifest adjuvant treatment, such as disulfiram (Antabuse), is used with psychotherapy, the success is often greater.

Although no typical alcoholic personality has been identified,

Treatment of the chronic alcoholic. M. Clin. North America 37:595-607, 1953.

most drinkers are poorly adjusted, unstable, and restless. Refusing to recognize personal inadequacies and denying any internal conflicts, the patient seems to want to expose himself to difficulties and to indulge in all manner of experiences. Basically passive, the individual has a compulsive need to prove himself.

Group therapy has merit in saving time and because of the value of the interaction of all members of the group.

• *Aversion or conditioned reflex therapy* is given in a hospital with 5 to 8 treatment sessions as follows:

Warm saline solution containing 0.1 gm. of oral emetine and 1 gm. of sodium chloride to 20 oz. of water is given in 2 glasses of 10 oz. each. Immediately thereafter a hypodermic injection is made of 6 minims of a 40-cc. sterile aqueous solution containing 3.25 gm. of emetine hydrochloride to produce emesis, 1.65 gm. of pilocarpine hydrochloride for diaphoresis, and 1.5 gm. of ephedrine sulfate for support. Then 1 oz. of whisky is swallowed. This whole procedure is repeated.

Diaphoresis and nausea occur, but treatment is continued by giving 2 oz. of warm water containing 2 oz. of whisky. If no emesis occurs, another straight whisky is taken. After emesis, the routine is repeated, except that 2 of the mixed whisky-and-water drinks are given in place of the saline solution and are followed by pure whisky.

Treatment is discontinued if the pulse rate, determined every five minutes, rises above 140. In later sessions dosage of emetine and duration of treatment are increased.

• *Endocrine therapy* is based on the theory that alcoholism produces adrenal injury with secondary hypoglycemia, liver damage, and sex changes.

Adrenal cortical extract, 30 cc., is given intravenously in 3 divided doses during the first twenty-four hours, 20 cc. in 2 doses during the second twenty-four hours, and then 5 to 10 cc. daily for three days. The patient is discharged from the hospital, and 2 to 5 cc. is given intramuscularly twice weekly for three weeks and once weekly for an indefinite period.

• *Antabuse* is a valuable adjuvant to psychotherapy.

After a thorough physical examination and detailed history, the patient takes 2 gm. of Antabuse the first day, 1.5 gm. the second, and 1 gm. the third; then 0.75 gm. from the fourth to the eighth day.

Arrangements having been made for hospitalization if necessary, 40 to 50 cc. of whisky is given on the fourth day and 30 to 40 cc. on the eighth. After that, an attempt is made to adjust the Antabuse dosage so that 10 to 20 cc. of whisky produces flushing of the head and slight tachycardia and dyspnea for fifteen to twenty minutes.

Antabuse should be administered with extreme caution if the patient has myocardial failure, coronary disease, cirrhosis of the liver, nephritis, epilepsy, goiter, drug or paraldehyde addiction, asthma, diabetes mellitus, or a disturbance of the hematopoietic system or is pregnant.

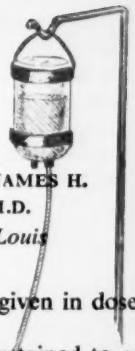
• *Alcoholics Anonymous* has made great contributions in the treatment of the alcoholic. The association, which was organized in 1935, has grown rapidly and works closely with physicians and hospitals.

¶ PROCAINE HYDROCHLORIDE SENSITIVITY may be fatal for persons allergic to the substance by heredity or previous exposure. Therefore, before use of local anesthetics of this group, Leo H. Criep, M.D., and Creso de Castilho Ribeiro, M.D., of the University of Pittsburgh and Montefiore Hospital, Pittsburgh, recommend intranasal application of the drug; if severe sensitivity exists, untoward symptoms will develop in a few minutes. Heroic treatment with oxygen, sympathomimetics, antihistamines, sedatives, digitalis, and corticosteroids according to indication failed to save life in 1 instance of asphyxia from acute bronchospasm after administration of procaine hydrochloride to an otherwise atopic patient and in 2 cases of immediate anaphylactic reactions to the drug.
J.A.M.A. 151:1185-1187, 1953.

¶ EXPULSION OF TAPEWORM may be facilitated when medication with atropine sulfate precedes administration of the vermifuge. The alkaloid is believed to prevent spasm of the folds of the intestine around the scolex. In a case of infestation with *Taenia saginata,* Joseph J. Combs, M.D., and Fannie Kate Ward of the North Carolina State College, Raleigh, injected 1/75 gr. of the drug hypodermically after two days of preparatory purgation with magnesium sulfate. A mixture of 8 gm. of oleoresin aspidium and 30 cc. each of mucilage of acacia, saturated solution of magnesium sulfate, and water was passed through a Rehfuss tube in the duodenum. Two hours later an additional ½ oz. of the cathartic was given and the tube removed. The bulk of the worm, 6 yd. long, and the head were passed completely after about four hours.
North Carolina M. J. 14:79-80, 1953.

¶ HAIR GROWTH ON TOES of gangrenous extremities is a valuable prognostic sign influencing the decision to amputate. Blood flow sufficient to maintain active growth of hair probably also is adequate to heal necrotic lesions, remarks Meyer Naide, M.D., of the University of Pennsylvania, Philadelphia. Most healthy persons have hair on the toes. Male patients less than 50 years of age usually have 15 to 20 hairs on the great digit; women have somewhat fewer. The count decreases with the severity of ischemia. A normal amount of hair or regrowth of blond hair, later turning black, during medical treatment or after lumbar sympathectomy indicates establishment of sufficient collateral circulation to assure healing. The sign was diagnostically significant in 173 patients with popliteal or femoral arterial occlusion, including 53 subjects with gangrene; 17 of the latter required amputation.
New England J. Med. 248:179-182, 1953.

Basic need of the patient with liver coma is adequate daily intake of protein and carbohydrate.



Management of Liver Coma

MICHAEL M. KARL, M.D., ROY A. HOWELL, M.D., JAMES H. HUTCHINSON, M.D., AND FRANK J. CATANZARO, M.D.
Washington University and St. Louis Hospital, St. Louis

ADEQUATE nutrition is widely accepted as one of the most important measures in the treatment of cirrhosis and hepatic coma.

The daily intake should include from 110 to 140 gm. of protein and 350 to 500 gm. of carbohydrate. Severe restriction of fat content does not seem necessary.

Tube feedings are given by slow, constant drip for comatose patients. If vomiting prevents adequate intake, parenteral nutrition must be instituted to provide amino acids equivalent to 100 to 200 gm. of protein and 300 to 400 gm. of carbohydrate daily.

The administration of parenteral fluids high in caloric content requires relatively large volumes of water. The danger of water intoxication with resultant dilution of blood electrolytes thus arises, necessitating careful observation of a patient's total water and electrolyte balance.

Parenteral administration of vitamins in amounts several times the normal requirements is advised by Michael M. Karl, M.D., Roy A. Howell, M.D., James H. Hutchinson, M.D., and Frank J. Catanzaro, M.D. If the prothrombin time is low, or when aureomycin is used, vitamin K should be given in doses of 72 mg.

Sodium is usually retained to an abnormal degree by cirrhotic patients and contributes to the formation of edema and ascites. This may be managed either by a low-salt diet, 200 to 600 mg. daily, or mercurial diuretics. Again, serum electrolytes must be watched closely for development of hyponatremia or hypopotassemia. Because of the concomitant loss of protein, paracenteses should be avoided as far as possible.

Aureomycin should be given by stomach tube, 1 gm. daily, to control infections and possibly to aid in preventing liver necrosis.

Crude liver extract may be of value in producing diuresis and tissue regeneration and as a lipotropic agent. The intramuscular preparation may be given intravenously, gradually building up the dosage to 20 cc. daily, if diluted to 1,000 cc.

Anemia is treated by transfusion of whole blood or washed red cells and by large doses of vitamin B_{12}.

Early in the development of hepatic coma, delirium, restlessness, and hallucinations may occur, making sedation desirable. Since all sedatives are hepatotoxic to some

Liver coma, with particular reference to management. Arch. Int. Med. 91:159-176, 1953.

degree, no completely safe drug is available for this purpose. Paraldehyde and barbital are the least dangerous.

Laboratory and clinical findings are essentially the same in hepatic coma and in severe liver disease without coma. The incidence of abnormal hepatic laboratory tests is so high that, even if a patient is cirrhotic, a careful search must be made for other causes of coma before assuming that the liver disease is responsible.

Diagnosis of Extrathyroid Hypermetabolism

CHARLES V. MECKSTROTH, M.D., RICHARD L. RAPPORT, M.D., GEORGE M. CURTIS, M.D., AND SARAH JANE SIMCOX

HIGH basal metabolic rates may result from such various nonthyroid factors as leukemia, diabetes, airway obstruction, cardiovascular disease, and psychoneurosis.

Hyperthyroidism can be excluded by several tests, each showing a different aspect of glandular function. The somnolent metabolic rate is most useful in cases of functional disorders, particularly psychoneurosis.

Protein-bound iodine in serum, radioactive iodine uptake by the thyroid, and serum cholesterol were also determined in 49 cases of extrathyroid hypermetabolism at Ohio State University, Columbus. Most values were within normal limits. Tests were evaluated by Charles V. Meckstroth, M.D., Richard L. Rapport, M.D., George M. Curtis, M.D., and Sarah Jane Simcox.

The somnolent metabolic rate, which is determined after intravenous Nembutal injection, eliminates all nervous and muscular factors. Values are relatively stable and not affected by iodine, radioiodine, or thiouracil, an advantage in estimating results of treatment for hyperthyroidism.

The basal metabolic rate shows total body metabolism and does differentiate possible causes.

Radioactive iodine level determined by a twenty-four-hour count tells how much is in the thyroid but not rates of uptake and release. The procedure, restricted in use, is affected by exogenous iodination.

The serum protein-bound iodine procedure, the most direct measure of thyroxin formation, is also affected by exogenous iodine and, as yet, is not generally available.

Serum cholesterol, variable and misleading, is used as an inverse gauge of thyroid activity.

The laboratory diagnosis of extrathyroidal hypermetabolism. **J. Clin. Endocrinol. 12:1373-1379, 1952.**

In candidates for major heart surgery, exploratory operation is the final diagnostic measure.

Exploratory Surgery of the Heart

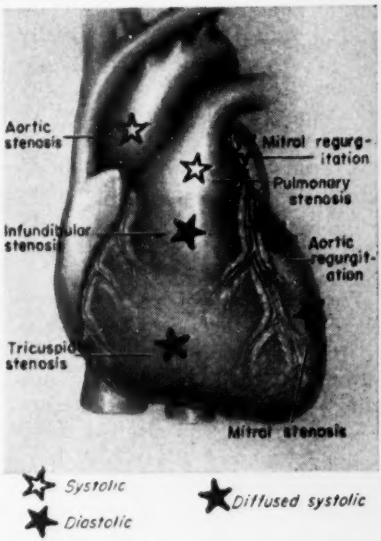
CHARLES P. BAILEY, M.D., ROBERT P. GLOVER, M.D., AND THOMAS J. E. O'NEILL, M.D.
Hahnemann Medical College, Philadelphia

WHEN diagnosis can be established by no other means, exploratory operation on the heart is logical, simple, and of great value. Such surgery is performed in the hope that a definitive, corrective surgical maneuver may be feasible once the diagnosis is clarified, explain Charles P. Bailey, M.D., Robert P. Glover, M.D., and Thomas J. E. O'Neill, M.D.

Operative cardiac exploration must be conducted in an organized manner as follows:

1] Inspection and palpation of the outer surface of the pericardium reveals the size and contour of the heart. Abnormal thrills and pulsations suggest obstructions, dilatations, or abnormal communications.

Palpation in the mediastinum may disclose patent ductus arteriosus or coarctation of the aorta. Palpation of the aorta can show an aneurysm or a systolic thrill at the root, suggestive of aortic stenosis. Dissection of the mediastinal tissues may reveal a double aortic arch or vascular ring. Pressures in the pulmonary artery are determined by direct insertion of a small needle through the wall of the vessel with manometric equipment.



2] When the pericardium has been opened, inspection and palpation of the heart are feasible. Pressure determinations may be made in any chamber or great vessel. The over-all size of the heart and relative volume of each chamber may be estimated.

Whereas general conditions such as anemia may produce symmetric dilatation of all chambers, most circulatory abnormalities specifically enlarge or diminish one or more

Exploratory surgery of the heart. Dis. of Chest 22:640-670, 1952.

cardiac chambers but not all. Thus, enlargement of the right auricle alone suggests tricuspid stenosis. The right auricle as well as the right ventricle is greatly dilated in auricular septal defect and when all or most of the pulmonary veins empty directly into the right auricle or into the venae cavae.

The systolic thrill palpable in the right atrium may be due to an interatrial septal defect but usually indicates tricuspid insufficiency. Dilatation of the right ventricle suggests either [*a*] an obstruction of the outflow tract in the pulmonary artery, pulmonary valve, or infundibulum, [*b*] excessive pulmonary blood flow due to an auricular or ventricular septal defect, or [*c*] pulmonary hypertension.

Transposition of the great vessels is readily diagnosed by observing that the aorta arises from the anterior (right) ventricle. The pulmonary artery then arises posteriorly from the left ventricle. The transposed pulmonary artery may have free blood flow or may be partially or largely obstructed at the origin. In the latter instance, the pressure in the vessel is low and a systolic thrill is palpable over the vessel.

Thrombosis of the left auricular appendage is nearly always the result of mitral stenosis, which can be recognized by the palpation of a solid or woody noncompressible appendage.

3] Exploration of the interior of the cardiac chambers and adjacent great vessels may be done either by inserting a probe, sound, or other small instrument through the heart or vessel wall into the vascular lumen or by thrusting a finger into the blood-containing chamber. The latter procedure is far more satisfactory if feasible, since the sense of direct touch is utilized.

The left auricle and right ventricle are the two chambers usually examined. The left auricle is explored by inserting the right index finger through an incision in the tip of the left auricular appendage, after applying a hemostatic purse-string suture. The finger readily detects an intraauricular clot or tumor. Any auricular septal defect can be recognized and evaluated as to size and type. The mitral valve can be palpated and digitally traversed and insufficiency or stenosis evaluated.

The right ventricle can be entered satisfactorily through an anterior wall incision. Ventricular septal defects are easily recognized. The pulmonary valve and artery may be evaluated for constrictions, general stenosis, or enlargement.

¶ MECKEL'S DIVERTICULUM may be diagnosed preoperatively by demonstration of the air-filled pouch in a survey roentgenogram of the abdomen. In 3 cases studied because of abdominal symptoms and melena, the sign described by Henry H. Lerner, M.D., Samuel S. Levinson, M.D., and A. Eugene Kateman, M.D., of Boston was confirmed by surgery or barium filling.

Am. J. Roentgenol. 69:268-271, 1953.

Since development is slow, shock from burn should be anticipated according to type and extent of injury.

Burn Shock in Children

JOHN L. BELL, M.D., SHERMAN DAY, M.D., AND HARVEY S. ALLEN, M.D.
Northwestern University, Chicago

EVEN though burn involves less than 10% of the body surface of a child, symptoms of reduced circulating blood volume such as deep thirst, peripheral collapse, altered sensorium, tissue anoxia, and oliguria may occur. Immediate administration of blood and plasma intravenously and limited amounts of fluid orally, according to the extent and type of burn, are advocated by John L. Bell, M.D., Sherman Day, M.D., and Harvey S. Allen, M.D.

The adequacy of blood volume restoration must be determined at intervals throughout the period of anticipated shock. Formulas based on percentage of body surface burned or on laboratory findings alone are not always reliable. The patient's status is best evaluated by frequent correlation of symptoms and signs, the urinary output, and laboratory determinations.

Plasma alone may be sufficient if burns are not severe, but with severe and extensive injury a more sustained and rapid response is obtained by use of whole blood as well.

Oxygen, parenteral electrolytes, supplementary vitamins, high caloric and high protein diets, and tracheotomy often are required.

Complications of nutritional alterations may be avoided by removing the whole-thickness slough in five to ten days and fixing skin grafts two to three days later.

Alterations of the sensorium are particularly common in children. Drowsiness may be followed by restlessness and mental confusion. The use of sedatives and narcotics at this time may mask the seriousness of shock. Neither morphine nor general anesthesia is given before or during initial care of the burned area if shock is suspected. Barbiturates by rectal suppository may be used if necessary to control hysteria from fright.

Burn shock is a steadily progressive phenomenon manifested by a prolonged reduction in circulating blood volume for forty to forty-eight hours. The rate and quality of the pulse should be frequently observed. A rising pulse rate is an early manifestation. The blood pressure is usually sustained at normal levels at the outset.

Hematocrit and hemoglobin determinations should be made at intervals. An elevated hematocrit ac-

The management of burn shock in children at Cook County Hospital. Quart. Bull. Northwestern Univ. M. School 27:14-17, 1953.

companying burn shock decreases as shock is adequately treated.

Thirst of the patient in burn shock is not controlled by the oral intake of liquids alone. If vomiting is not present, however, limited measured amount of liquids orally is permitted every hour. The abeyance of thirst usually is a favorable sign.

Coolness of the nose and extremities, pallor, sweating, and cyanosis are other signs that should be looked for at regular intervals. Air hunger and loss of consciousness are late effects.

Accurate recording of the hourly urinary output by an indwelling urethral catheter provides useful data for determining whether circulating blood volume is adequate. Persistent oliguria together with clinical signs of shock demand more vigorous use of plasma and blood.

The appearance of hemoglobin in the urine is no reason to refrain from the administration of properly matched blood and plasma, if oliguria, hemoglobinuria, and the signs of burn shock persist.

The urinary specific gravity is useful in deciding whether the response to intravenous treatment is adequate or is approaching the danger of overtreatment.

Metastatic Tumors in the Breast

HERMAN CHARACHE, M.D.

MAMMARY tumors are nearly always primary in origin, but the possibility of a metastatic lesion does exist.

Herman Charache, M.D., reports 10 metastatic cases seen at the Brooklyn Cancer Institute in the past ten years and notes that 15 others have previously been reported.

Diagnosis of a metastatic tumor in the breast may not always be possible; the small primary lesion may not be noticed. An extramammary lesion, if found, may represent either a double primary or a metastatic growth. Histologic determination of highly anaplastic metastatic lesions cannot always be made or may not indicate the primary site.

Metastatic tumors in the breast are less fixed to surrounding tissues than are primary tumors. The consistency of the tumor mass is similar to that of a primary breast cancer. The skin overlying the tumor is of normal texture and not dimpled or adherent to the tumor. Breast pain does not occur.

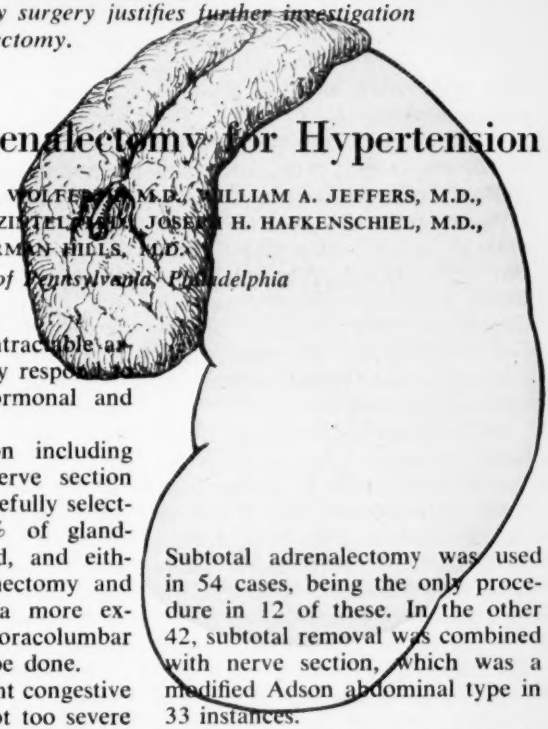
The primary lesion should be removed if possible, with the excision of the metastatic growth or simple mastectomy, followed by radiation therapy. The prognosis is grave.

Metastatic tumors in the breast. Surgery 33:385-390, 1953.

Success in reducing high blood pressure by surgery justifies further investigation of adrenalectomy.

Subtotal Adrenalectomy for Hypertension

CHARLES C. WOLFERTH, M.D., WILLIAM A. JEFFERS, M.D., HAROLD A. ZINTEL, M.D., JOSEPH H. HAFKENSCHIEL, M.D., AND A. GORMAN HILLS, M.D.
University of Pennsylvania, Philadelphia



SEVERE, otherwise intractable arterial hypertension may respond to treatment of both hormonal and neurogenic factors.

A 2-stage operation including adrenalectomy and nerve section may be effective in carefully selected cases. About 95% of glandular tissue is removed, and either abdominal sympathectomy and splanchnicectomy or a more extensive procedure, thoracolumbar sympathectomy, may be done.

Persistent or recurrent congestive heart failure that is not too severe to preclude surgery is frequently relieved by the operation. Results seem partly due to lowering of blood pressure and partly to regulation of electrolytes, especially excretion of salt. If renal function is much impaired, results are disappointing.

Charles C. Wolferth, M.D., William A. Jeffers, M.D., Harold A. Zintel, M.D., Joseph H. Hafkenschiel, M.D., and A. Gorman Hills, M.D., review 56 cases observed for periods of four to twenty-six months after surgery.

Total adrenalectomy was done as the sole procedure in 2 instances. Subtotal adrenalectomy was used in 54 cases, being the only procedure in 12 of these. In the other 42, subtotal removal was combined with nerve section, which was a modified Adson abdominal type in 33 instances.

The first patient, a 33-year-old woman, had not benefited by drugs or by dietary restriction but improved temporarily after thoracolumbar sympathectomy and removal of 1 adrenal.

When blood pressure again rose, all but 10% of the other gland was taken out. Some replacement therapy was required just after operation but practically none later, except for liberal salt intake. The patient was able to resume household duties. A little cortisone was given during successful delivery by cesarean section.

For nearly two years, blood pres-

Effects of subtotal adrenalectomy alone and combined with sympathectomy upon the blood pressure levels and complications of severe arterial hypertension. Bull. New York Acad. Med. 29:115-137, 1953.

sure has been 110 to 130 systolic and 70 to 90 diastolic, contrasting with 230 systolic and 140 diastolic preoperatively.

In other cases, subtotal removal of adrenals was then attempted without sympathectomy, but results were not as good. If more than 10 or 15% of a single gland was left, blood pressure often stayed high. When the remnant was limited to 10%, adrenal insufficiency developed in some cases, and replacement therapy sometimes restored hypertension.

After sympathectomy used alone, blood pressure falls precipitously, but in time tends to creep back toward the former level. Whatever the mechanism, this readjustment more than any other factor interferes with benefits of operation or perhaps of long medication.

After adrenalectomy alone, values usually drop within twelve to twenty-four hours, rise again, and gradually subside during the next month or two. Pressure then remains low, except for a slow, generally limited increase in some instances.

When both operations are undertaken in well-selected cases and replacement therapy is not overdone, pressure falls promptly and stays down. This is the main advantage of combined procedures and occasionally of adrenalectomy alone. Well-being may continue indefinitely.

The physician should be able to count on good cooperation after surgery. Replacement must be regulated carefully, since a daily difference of 3 mg. of cortisone may convert normal to hypertensive values.

Not only must the patient obey instructions to the letter, but someone in close contact should at once report any deviation from the usual state of health. Even patients who seldom require extra hormones may suddenly need a supplement because of infection, gastrointestinal upset, hot weather, or other stress. Failure to observe rules may cause fatal insufficiency.

Candidates must have progressive threatening vascular deterioration, yet not extreme renal or cerebral damage. Adrenalectomy should not be done if 15% of injected phenolsulfonphthalein is not excreted in fifteen minutes, blood urea nitrogen without congestive heart failure is above 20 mg. per cent, or urea clearance below 40% of normal function.

In most cases, hypertensive retinopathy is much reduced by combined procedures, and a degenerating mental state may brighten. With only moderate renal involvement, surgery may improve blood pressure and the general condition but will hardly affect kidney function.

If blood vessels are already greatly harmed, a few people are bound to die from vascular accidents at some time after operation, even if blood pressure is considerably lower.

The procedures described are still experimental and should be attempted only by groups interested in hypertensive problems, and for individuals with little to lose by failure.

Avascular necrosis of ureters after removal of uterine cancer may be obviated by anastomosis to the colon.

The Ureter after Radical Hysterectomy

GRAHAM GODFREY, M.D.
Women's Hospital, Melbourne, Australia

URETEROCOLIC anastomosis to preserve renal function may be necessary soon after radical surgery for uterine cancer.

When radical hysterectomy is performed, with consequent wide excision of pelvic cellular tissue, a considerable portion of each ureter must be free from surrounding tissue. The ureter may immediately become necrotic from vascular deprivation or may become involved later in postoperative scar tissue, states Graham Godfrey, M.D.

Unilateral or bilateral ureterovaginal fistula may occur because of the radical surgery or as a result of later recurrences after radiotherapy. The usual sequence is avascular ureteral necrosis, retroperitoneal extravasation of urine, and fistula formation. The fistula is followed by ureteric stricture, hydroureter and hydronephrosis with, almost inevitably, recurrent infective episodes, and, finally, irreparable kidney changes.

Spontaneous closure of the fistula, even if unilateral, is far from desirable. Urinary infection endangers the other kidney and entails an uncertain and often prolonged period of discomfort.

Infection, hematoma formation, and ureteral pressure points may also contribute to kidney damage. Reperitonealization of the pelvic floor can leave a tight diaphragm, creating pressure on the ureters. The use of interrupted sutures reduces the tension from such a cause.

Care must be taken during pelvic dissection to handle the ureters gently and to preserve the perireteric sheath and at least the branch from the superior vesical artery to the ureter.

Pyelograms should be made routinely after surgery to determine the status of the upper urinary tract, since progressive deterioration of the kidney can follow recurrent tumor growth or ureteric stricture without any evidence of growth.

If intravenous pyelographic study does not permit an exact diagnosis of ureterovaginal fistula, the passage of ureteric catheters with ureterographic examination is done next. Further aid may be obtained by intravenous dye injection with cystoscopic study and injection of dye into the vaginal orifice of the fistula.

Pyelonephritis requires careful, frequent, and sustained observation and review. Failure to act may

The ureter after radical hysterectomy. Australian & New Zealand J. Surg. 22:198-206, 1953.

be disastrous. As soon as a ureteric obstruction is apparent, steps should be taken to preserve renal function before changes become irreversible.

In most cases, not enough good ureter is available above a fistula to effect a ureterovesical anastomosis without tension. Ureterosigmoid or ureterocecal anastomosis can usually be done and does not seem to inconvenience a female seriously. Nephrectomy should be avoided, since the fate of the other kidney is often uncertain in cancer cases.

The Neglected Pessary

W. T. POMMERENKE, M.D.

LONG-continued retention of a pessary in the vagina without removal and cleansing may be hazardous.

A well-fitted, comfortable pessary is sometimes useful in the nonsurgical treatment of uterine misplacements, though operative correction is usually preferable unless interdicted by the patient's condition. However, the patient should be fully aware of the presence of the pessary and warned of the need for periodic examination, declares W. T. Pommerenke, M.D., of the University of Rochester, N. Y., who cites 4 illustrative cases of lesions resulting from retained pessaries. In 3 cases presence of the pessaries, which had been retained for eight to eleven years, had been forgotten by the patients. Meanwhile leukorrhea, pain, or ulceration resulted. In the other case, symptoms of cancer were probably disregarded because of the retention of a pessary for more than seven months without removal. Purulent material had collected behind the pessary and the cancer was obvious when the apparatus was removed.

For hygienic reasons, simple cleansing douches between examinations are recommended and the pessary should be cleaned at appropriate intervals. Any resulting vaginitis or cervicitis should be promptly treated with local medications and temporary discontinuance of the pessary. Because vaginal mucosa has remarkable recuperative powers, lesions usually heal promptly after removal of the pessary unless far advanced.

A foreign body in the vagina causes an increase in the number and variety of bacteria. In older women, inflammatory reaction is more severe. Pruritus vulvae secondary to leukorrhea may occur. The inflammatory reaction when supplemented by pressure results in thinning of the mucosa; then excoriation follows with actual ulceration at pressure points.

The neglected pessary. Obst. & Gynec. 1:226-229, 1953.

Treatment for circumvallate placenta is expectant unless complications demand definitive therapy.

Placenta Circumvallata

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AN important complication of pregnancy, nearly as common as placenta previa, is placenta circumvallata. Maternal hemorrhage, infection, and third-stage complications are likely and are vital threats to the mother.

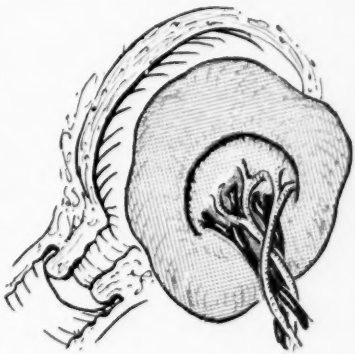
The fetal loss is high. The probable cause of death in utero with placenta circumvallata is placental deficiency. Russell J. Paalman, M.D., and Corwin G. Vander Veer, M.D., feel that this results either from infarction or from restriction of growth of the placental plate.

The most common symptom of circumvallate placenta is vaginal bleeding, frequently severe enough to require transfusions. The bleeding is usually intermittent and often starts before the fetus is viable.

The next most common symptom is hydrorrhea gravidarum, frequently confused with an ordinary rupture of the membranes. Intermittent contractions of the uterus may appear, often during vaginal bleeding or hydrorrhea. The condition is hard to distinguish from premature labor.

Most patients with placenta circumvallata have premature labor. The average length of pregnancy with the condition is thirty-four weeks; stillbirths and early neonatal deaths are common.

The predelivery diagnosis is most often confused with placenta previa. However, hydrorrhea rarely occurs with placenta previa and bleeding with a circumvallate placenta usually appears earlier than with placenta previa, is less profuse, and is often accompanied by uterine contractions. Placentograms and sterile vaginal examinations, which may provide diagnostic help in placenta previa, are negative in cases of placenta circumvallata.



Circumvallate placenta. Am. J. Obst. & Gynec. 65:491-497, 1953.

An abruptio placentae is likewise commonly confused with the circumvallate placenta. An abruptio placentae will present as an acute single episode with severe pain, tonic contractions of the uterus, shock, and signs of fetal distress, whereas the symp-

toms of placenta circumvallata are intermittent, the pain is slight, uterine contractions are feeble, and shock is unusual.

Management of patients with a circumvallate placenta varies with the symptoms. No specific therapy exists for a condition of which only a presumptive diagnosis can be made. Treatment is directed to preserve the pregnancy to term.

Patients with intermittent contractions or hydrorrhea are kept in bed and observed. Prophylactic antibiotics are given in cases of copious watery discharge. Transfusions are used when indicated. If hemorrhage is severe, sterile vaginal examination is done to determine the cause, and induction of labor may be necessary.

Complications of the third stage of labor such as improper separation of the placenta and shearing of the membranes from the placenta are fairly frequent. The circumvallate placenta and membranes should be examined closely so that the patient is not returned to bed with an incompletely evacuated uterus and the concomitant danger of postpartum hemorrhage. Manual removal of retained pieces may be necessary.

Management of Morning Sickness

ALLAN B. CRUNDEN, JR., M.D., AND
WILLIAM A. DAVIS, M.D.

NAUSEA and vomiting during early pregnancy are frequently amenable to Emetrol, a phosphorated carbohydrate solution. This preparation contains only invert sugars, orthophosphoric acid, flavoring, and stabilizers to maintain proper hydrogen ion concentration. Side reactions have not been observed during therapy.

Patients are instructed to take 2 tsp. of the phosphorated carbohydrate solution without additional liquid when arising in the morning. Dosage may be increased to as much as 2 tbs. if necessary. Medication is continued throughout the day as required to combat nausea.

Allan B. Crunden, Jr., M.D., and William A. Davis, M.D., of the Montclair Community Hospital, Montclair, N. J., report that alternate patients were given the phosphorated solution or a placebo. Of the 123 receiving the solution, 79% reported definite improvement, whereas only 16% of those given placebos noticed decreased symptoms.

Beneficial effects are usually noted within the first twenty-four hours of treatment. If no response is observed after three days, other therapeutic measures should be substituted.

The oral use of a phosphorated carbohydrate solution in nausea and vomiting of pregnancy. Am. J. Obst. & Gynec. 65:311-313, 1953.

Problem of care of infants delivered by cesarean section often is that of care of prematures.

Infant Mortality with Cesarean Section

HARRY R. LITCHFIELD, M.D., S. DAVID STERNBERG, M.D., AND JACOB HALPERIN, M.D.
Beth-El Hospital, Brooklyn

RICHARD TURIN, M.D.
U. S. Army Hospital, Fort Campbell, Ky.

THE high fetal mortality associated with cesarean sections, 4.5 to 11%, is probably the result of the complication of pregnancy necessitating the operation rather than the actual operation. The number of deaths can be reduced by appropriate obstetric and pediatric measures.

CAUSES

Infants delivered by section seem prone to respiratory distress. Frequently, the baby appears healthy at birth and breathes spontaneously, but respiratory symptoms gradually appear within the next few hours. Costal retraction, irregular breathing, cyanosis, twitching, and convulsions may occur. The syndrome resembles that seen with so-called hyaline membrane disease.

The respiratory difficulty may be essentially mechanical, and hyaline plugs or membrane formation may be resolved later by absorptive or phagocytic lung processes.

Deaths may be due to an increase of cerebrospinal fluid around the brain, possibly related to the cesarean delivery, or the fluid increase may be the result of anoxia after maternal hemorrhage from placenta previa.

The same syndrome is also ascribed to aspirated fluid, since intratracheal aspiration of babies delivered by section produces more fluid than is recovered from infants delivered pelvically.

PROPHYLACTIC MEASURES

The number of fetal deaths associated with placenta previa has been greatly reduced at the Beth-El Hospital, Brooklyn, since the mothers admitted to the hospital with this complication have been kept strictly in bed and given transfusions to maintain blood volume and blood pressure. The fetus thus has an opportunity to develop to a more mature state so that the infant can better survive the newborn period. However, atelectasis and aspiration pneumonia are relatively frequent among infants who die after delivery for placenta previa.

Harry R. Litchfield, M.D., S. David Sternberg, M.D., Jacob Halperin, M.D., and Capt. Richard Turin, M.C., U. S. A. R., allow only a slow release of amniotic fluid when the uterus is opened, so that

Fetal mortality in cesarean section. J.A.M.A. 151:783-785, 1953.

the pressure is not too great for the infant. Other measures are:

After delivery, the baby is placed below the level of the mother's abdomen so that blood from the placenta can run into the infant's circulation to prevent a hematogenic shock.

Gentle suction of the oropharynx and nasal passages should be done. Any necessary laryngoscopic or intratracheal suction or oxygen insufflation can then be performed. The gastric contents are aspirated.

The infant is put in a heated incubator in a 10° Trendelenburg position and taken to the nursery.

Vitamin K, 2.4 mg., is given intramuscularly every four hours in 6 doses. Penicillin and streptomycin, or the sulfonamides and penicillin, are administered.

Continuous oxygen is used, but is discontinued for about two minutes every two hours, when 93% oxygen and 7% carbon dioxide are given to overcome the oxygen monotony. The oxygen should be super-saturated with moisture to aid the removal of aspirated amniotic fluid and the absorption of fluid and debris in the alveoli.

The baby is not fed for at least twenty-four hours. In the interval, oropharynx and gastric contents are aspirated as required.

Trendelenburg Position Held by Friction

C. LANGTON HEWER, M.B.

A CORRUGATED rubber mattress fastened to the operating table will hold the patient firmly in a steep head-down tilt.

Slipping is prevented by friction on skin of the back. If rubber bolsters are placed under the neck, lumbar curve, and ankles, no other anchorage is needed. The new method does away with padded shoulder rests and other devices that hamper circulation or strain the joints. The lumbar support reduces postoperative backache.

The ribbed mattress has been used for many gynecologic operations at St. Bartholomew's Hospital, London. Horizontal ridges may be visible on the skin for some hours, but no soreness has resulted, observes C. Langton Hewer, M.B.

Sheets of corrugated rubber of the type from which surgical drains are cut are sewed to a Sorbo rubber mattress. Flat hooks at one end fit over the foot of the operating table. Accessory pads have smooth rounded tops and flat corrugated bases interlocking with mattress ribs. The smallest pad goes under achilles tendons, avoiding pressure on heels and calf veins.

Arms are usually fastened to the sides by the wrists with malleable rubber-covered metal strips pushed under the mattress.

Maintenance of the Trendelenburg position by skin friction. Lancet 264:522-524, 1953.

Treatment and training help the child with palsy realize his potentialities for an active life.

Rehabilitation with Cerebral Palsy

SIDNEY KEATS, M.D.
New Jersey Orthopedic Hospital, Newark

THE child with cerebral palsy is not invariably mentally defective and may be restored to useful life and a rightful place in society.

Cerebral palsy is a general term designating any paralysis, weakness, incoordination, or functional deviation of the motor system resulting from an intracranial lesion. Since brain injury may affect many other functions, the condition presents a complex entity with many handicaps.

Only poliomyelitis is a greater crippler of children. Of all live births, 0.5% produce a cerebral palsied child. The annual increase of children with cerebral palsy in the United States is 7 per 100,000.

The condition is classified into clinical types depending on the predominant motor handicap: [1] true cerebral spastic paralysis, [2] athetosis, [3] rigidity, [4] ataxia, and [5] tremor.

Defective prenatal development is the most common cause of cerebral palsy, especially of the ataxic and athetoid types. Other antenatal factors are rubella during the first trimester, toxemias, premature placental separation, and endocrine dysfunction. Symmetric involvement suggests prenatal or congenital background. Birth trauma resulting from direct mechanical injury and prolonged oxygen lack is etiologic in 3 to 6% of cases. Postnatal causes are erythroblastosis, skull fractures, severe convulsive seizures, pertussis, and encephalitis.

More than two-thirds of children with cerebral palsy are educable. With adequate treatment and training, these children can and do improve physically, mentally, and socially, states Sidney Keats, M.D.

The first step in rehabilitation is evaluation. Each child is an individual problem. An accurate diagnosis must be made and the type of palsy classified. Extremity involvement and defects of speech, hearing, and vision should be appraised. Motor and sensory handicaps as well as the lack of environmental stimulation must be taken into consideration in evaluating the child's mental ability. Social maturation level and emotional background should also be investigated by the psychologist.

Rehabilitation treatment revolves about four main objectives: [1] locomotion, [2] speech, [3] self-help—arm skills, and [4] education.

Braces are used to support weak muscles, prevent contractures, and overcome pull of undesired muscle

Rehabilitation of the child with cerebral palsy. J. Internat. Coll. Surgeons 18:935-939, 1952.

contraction or joint motion. A variety of equipment is available to help achieve the goal of walking.

Conditioning exercises directed by physical therapists are valuable. Training is patterned after the normal maturation process—the child being taught to sit, then to kneel and stand, and, finally, to walk. Skilled arm and hand movements necessary for feeding, dressing, and general self-efficiency are taught by occupational therapists. Speech therapists train the muscles of the diaphragm, tongue, larynx, pharynx, and lips.

Operations on the nervous system are of no general help. Orthopedic surgery is of value in selected cases and is generally reserved for late adolescence when the greatest possible longitudinal bone growth has been achieved. Muscle-relaxing drugs are of assistance only as adjuvants to physical therapy. Intensive practice, sheer perseverance, and sympathy are required.

Every normally intelligent child with cerebral palsy is entitled to an academic education. Many do well in regular public schools. More teachers and special schools should be available for cerebral palsied children with normal intelligence.

Preventing Hypothermia in Pediatric Surgery

EDGAR A. BERING, JR., M.D., AND DONALD D. MATSON, M.D.

POSITIVE temperature control of infants during neurosurgical procedures can be achieved by utilizing a constantly recording thermometer and an electric blanket. Postoperative recovery is accelerated if severe hypothermia is so obviated, state Edgar A. Bering, Jr., M.D., and Donald D. Matson, M.D., of the Children's Medical Center, Boston.

The recording unit consists of a Brown Electronic Strip Chart Recording Potentiometer connected to a nickel resistance thermometer bulb, used as a rectal thermometer. The range of the instrument is 90 to 110° F., and a change of 1 degree in temperature causes over a ½-in. movement of the recording pen.

The electric blanket is covered with a conducting material grounded through the power supply cable. The temperature is controlled by a shockproof, 10-step regulator switch, kept well away from explosive gases. The blanket can be folded in the middle and closed with snap buttons on 2 sides so that the infant is completely enclosed if necessary. The open side and end allow easy access for intravenous tubing, thermometer wires, or examinations.

The blanket temperature is regulated during the operation as indicated by the patient's temperature.

A technic for the prevention of severe hypothermia during surgery on infants. Ann. Surg. 137:407-409, 1953.

Temporary poliomyelitis protection is achieved by the intramuscular injection of gamma globulin.

Gamma Globulin and Poliomyelitis

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University of Pittsburgh

LEWIS L. CORIELL, M.D., AND JOSEPH STOKES, JR., M.D.
University of Pennsylvania, Philadelphia

THE only agent known to be both safe and effective in preventing poliomyelitis or curtailing extent of paralysis is gamma globulin.

The supply is limited, however, and should be used to the best possible advantage. Plans of administration suited to various circumstances are outlined by William McD. Hammon, M.D., Lewis L. Coriell, M.D., Paul F. Wehrle, M.D., and Joseph Stokes, Jr., M.D., directors of extensive trials in 3 severe epidemics.

The chief value of passive prophylaxis will probably prove to be in improving the understanding of active immunization.

Red Cross gamma globulin was evaluated in western, southern, and midwestern areas of the United States during 1951 and 1952. About 55,000 children in the most susceptible age groups were given injections; half the subjects received gamma globulin and half gelatin. Results were observed closely for several weeks.

Prophylaxis was highly protective for short periods. Of 104 paralytic cases occurring within thirteen weeks, only 31 were in the group receiving globulin, in contrast to 73 after doses of gelatin.

Incidence of paralysis was not much altered during the first week following injection, but severity was definitely reduced. From the beginning of the second through the end of the fifth week, the protected group had only 15% of new cases; and from the sixth through eighth week, 35%. Immunity evidently waned and after the eighth week was apparently lost.

Gamma globulin has a number of drawbacks, including the short period of action, need for reinjection with each epidemic, and the physician's inability to determine time of exposure, and hence the best time for injection, or to distinguish susceptible from immune persons.

Without prophylaxis a child has at least a 200 to 1 chance of escaping paralysis. Expense of mass injection may be staggering. In field trials, calculated cost of globulin for each paralytic case prevented has run as high as $28,000.

Yet owing to the emotional impact of poliomyelitis, globulin will be demanded because nothing bet-

Evaluation of Red Cross gamma globulin as a prophylactic agent for poliomyelitis. J.A.M.A. 151:1272-1285, 1953.

ter can be had. When available, a vaccine that may be given routinely to small infants for more or less permanent immunity will be preferred.

Meanwhile, by demonstrating that amazingly low concentrations of antibodies are potent, gamma globulin has probably saved years of work with experimental vaccines.

The problem that remains is to reproduce in a few children results of vaccines in animals and to show lack of harmful reactions in human beings.

Supplies of gamma globulin will be allocated by the U. S. Office of Defense Mobilization. A dose of 0.14 cc. per pound of body weight is protective for approximately five to eight weeks. For immunity lasting ten to thirteen weeks, the dose should be repeated in five weeks. Scarce material must not be wasted on children already sick, since globulin given after onset of symptoms cannot change the course.

The injections are intramuscular, with a separate heat-sterilized syringe and needle for each child. The product is viscous, therefore a dose exceeding 5 cc. is injected with an 18-gauge needle 1½ to 2 in. long. For 5 cc. or less, a 1½-in., 20-gauge needle is used.

In extremely severe epidemics, with 150 to 500 cases per 100,000 population, the best method is mass immunization in the most vulnerable age group, for example, 1 to 6 years, 2 to 7, or 1 to 10. Under the most ideal circumstances, however, hundreds, even thousands of doses may be required in the community for each child theoretically saved from paralyzing disease.

With epidemic rates under 150 per 100,000, only healthy members of each family having a child with proved poliomyelitis might be treated, including all children and young adults, especially pregnant women.

A compromise plan might be considered where epidemics are severe and supplies more than adequate for contacts but insufficient for all children of the most susceptible ages.

Globulin could be given to probable as well as confirmed contacts. In other words, suspected cases would serve as guides to persons recently or currently exposed.

¶ TUBERCULOUS PERITONITIS alters the roentgenographic appearance of the small intestine. The changes observed by John T. Brackin, Jr., M.D., Joseph M. Miller, M.D., and William H. Bell, M.D., of the Veterans Administration, Fort Howard, Md., comprise delayed motility, segmentation of the barium meal, loss of the normal outlines of valvulae conniventes, and dilatation of segments. This abnormal intestinal pattern, reflecting a disordered motor function, is reversed after treatment with streptomycin, paralleling the symptomatic recovery of the patient.

Am. J. Roent., Radium Ther. & Nuclear Med. 68:887-893, 1952.

Climacteric symptoms in the male vary as much as in the female; the response to testosterone is diagnostic.

Diagnosis of the Male Climacteric

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Goldwater Memorial Hospital, New York City
JOSEPH W. GOLDZIEHER, M.D.
New York Medical College, New York City

PROGRESSIVE testosterone deficiency, primarily causing metabolic and circulatory symptoms and only secondarily producing sexual effects, results in a syndrome in the middle-aged and elderly male comparable to the female climacteric. Satisfactory response to testosterone gives validity to the diagnosis.

The syndrome resembles the female climacteric in the variability of symptoms, which may be slight or severe, short-lived or prolonged.

Irritability, insomnia, personality changes, and nuchal aches are more common with men, whereas hot flashes, tachycardia, palpitation, and general aches and pains are more frequent with women. Subjective nervousness is the commonest symptom for either sex.

Decreased libido and potency occurs in 75% of men during the climacteric; impotence occurs in 50%. Eventually the symptoms give way to the apparently asymptomatic postclimacteric state, with gradual development of senescence.

Libido and potency are not dominated exclusively by hormonal influences. Therefore the general somatic and mental symptoms do not correlate with the purely sexual aspects. Libido and potency may be maintained to some extent by elderly males who have typical climacteric symptoms.

Max Goldzieher, M.D., and Joseph W. Goldzieher, M.D., find that urinary ketosteroids tend to be low during the male climacteric and that a further decline occurs in the postclimacteric state. In 45% of climacteric men the urinary gonadotropins are elevated, and a further increase to 65% is found in the postclimacteric state. Testosterone secretion may decline at any age, but the magnitude of the deficiency is likely to increase with advancing years.

Extremely low ketosteroid excretion is probably the result of both a testicular deficiency and a decrease in adrenal cortical function. Diminished testosterone secretion is not always associated with a compensatory reaction of the anterior pituitary. Lack of increased gonadotropin secretion may be caused by failure of the physiologic mechanism to act or by inability of the pituitary to respond. Abnormally low gonadotropin assay val-

The male climacteric and the postclimacteric state. Geriatrics 8:1-10, 1953.

ues indicate impairment of the anterior lobe of the pituitary.

Circulatory symptoms such as sweating and hot flashes are controlled by testosterone administration in 100% of cases, while palpitation, vertigo, anginal pain, and chilliness are corrected in 80 to 92%. Among metabolic deficiency symptoms, fatigability, weight loss, weakness, and signs of prostatism are controlled in 100%. Muscular and central nervous system complaints respond in 60 to 80%.

Since latent metabolic disorders may occur, postclimacteric patients with hormonal deficiency, even though asymptomatic, are entitled to substitution therapy with testosterone unless other considerations make such dosage inadvisable. Well-being, vigor, and ambition are usually noted by these patients during treatment. Even when full control over all symptoms is established in the climacteric patient, treatment should not be ended.

Symptoms resembling those of the climacteric may appear in neurotic or psychoneurotic patients. If the ketosteroid and gonadotropin excretion is normal, the therapeutic test with testosterone combined with placebo administration will show whether the condition is psychogenic in origin.

Serum Aldolase Test for Cancer Activity

ROGER BAKER, M.D.

A HIGH rate of glycolysis is typical of growing malignant cells. Serum aldolase, an enzyme of the glycolytic mechanism, may indicate tumor activity preceding and after medical or surgical treatment, observes Roger Baker, M.D.

Patients with previously neglected advanced prostatic cancer were examined at the University of Chicago before and after therapy with diethylstilbestrol, orchiectomy, or bilateral adrenalectomy. Initial values were elevated in 12 of 16 cases. After therapy, high aldolase concentrations returned to normal in 10 cases. Serum aldolase was not increased in 21 cases of benign prostatic hypertrophy.

Aldolase is determined by the colorimetric technic of Sibley and Lehninger. Capacity to catalyze the breakdown of hexose diphosphate is measured. Since results may be 15% in error, from 2 to 4 trials may be required on each sample. Normal range for human serum aldolase is 2 to 9.6 units.

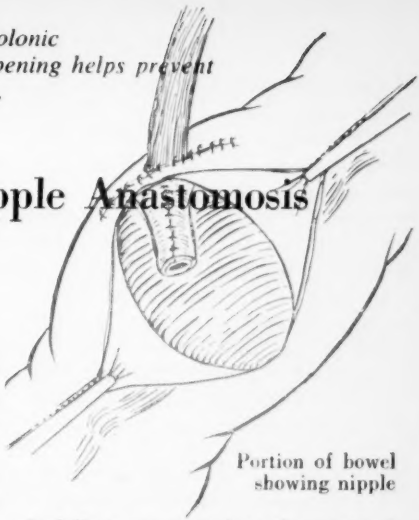
The test seems more reliable for prostatic carcinoma than the serum acid phosphatase method and apparently is not directly related to phosphatase levels, endocrine function, nutritional status, or effects of anesthesia, surgery, and blood loss.

Serum aldolase and its relationship to the hormonal control of cancer. J. Urol. 69:426-432, 1953.

Formation of an intracolonic papilla for the ureter opening helps prevent reflux after anastomosis.

Ureterointestinal Nipple Anastomosis

WILLY MATHISEN, M.D.
Rikshospitalet, Oslo



Portion of bowel showing nipple

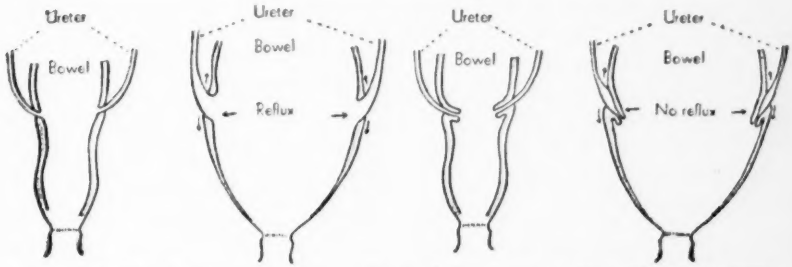
THE reflux of fecal-contaminated urine after anastomosis of the ureter into the colon can be avoided by forming an intracolonic papilla for the ureteral opening.

The main factor in producing upper urinary tract dilatation, ureteral reflux, and ascending infection after ureterointestinal anastomosis is intestinal pressure. The intracolonic pressure is considerably higher than that of the renal pelvis. If the ureteral opening lies on a level with the bowel mucosa, the stoma increases in size as the bowel distends with feces, gas, and urine. Straining and defecation further augment the pressure, until the intraureteral pressure is overcome and reflux occurs.

The tunnel technic of anastomosis fails to prevent intestinoureteral reflux. However, if a papilla is formed for the opening of the ureter into the intestine, the nipple is pressed against the intestinal wall as intracolonic pressure rises, the ureteral stoma closes, and reflux does not follow.

Willy Mathisen, M.D., reports successful use of the nipple procedure in 18 recent cases. The ureter is cut close to the bladder and fixed somewhat obliquely to the rectosigmoid between 2 taeniae,

Schematic representation of intestinoureteral reflux with ordinary anastomosis [*left*]. The colonic papilla [*right*] prevents this reflux.



A new method for ureterointestinal anastomosis. Surg., Gynec. & Obst. 96:255-258, 1953.

one suture at the end and one on either side.

An incision is then made in the bowel close to the end of the ureter, corresponding in length to the circumference of the ureteral stoma. The bowel is sutured to the free end of the ureter.

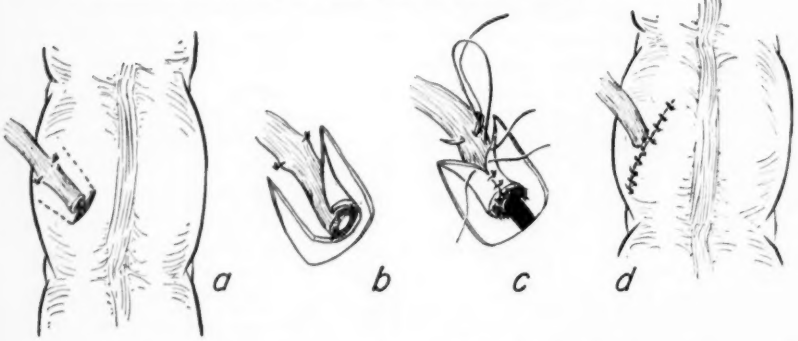
A long, soft rubber tube is inserted through the ureter into the renal pelvis, and the other end is drawn out through the anus by means of a bougie inserted into the rectum before operation.

gut, each stitch including the outer layer of the ureteral wall. The remaining opening in the bowel is closed transversely with sutures in 2 layers.

Ureteral tubes are removed after five to six days, but a rectal tube—a de Pezzer catheter—is left in place for two weeks. Antibiotic therapy is given preoperatively and postoperatively for two to three weeks.

To keep the intracolonic pressure low, the bowel is emptied six

Formation of the nipple anastomosis. The ureter is first fixed to the bowel transversely between 2 taeniae, a suture at the end and a suture on either side, and a U-shaped incision is made in the bowel [*a*]. The free end of the bowel flap is folded around the end of the ureter [*b*]. The end of the flap is stitched to the end of the ureter, a ureteral tube is inserted, and the edges of the flap are approximated, completing the nipple [*c*]. Bowel closure is transverse [*d*].



The rectosigmoid is then incised parallel to the ureter for 2 to 3 cm., with the base of the flap being slightly broader than the free cut end. The free end is sutured to the ureteral end around the circumference of the stoma, starting with the midline suture.

The sides of the flap are united in front of the ureter with interrupted sutures of fine chromic cat-

to eight times daily, and a rectal tube is inserted at night and connected to a bedside bottle. All gas-forming foods, that is, foods rich in cellulose, should be avoided.

Later excretory urograms show no dilatation of the upper urinary tract, and ureteral reflux is not demonstrable. Strictures do not form in the ureteral nipples and the stoma is not dilated.

Faradic stimulation-sedation opens the way for psychotherapy and fosters patient participation.

Nonconvulsive Electric Stimulation

NATHANIEL J. BERKWITZ, M.D.
University of Minnesota, Minneapolis

A SAFE and simple procedure to facilitate psychotherapy in selected cases is faradic stimulation-sedation-psychotherapy (FSSP). This technic can be employed by the therapist alone without attendants, does not require the usual safeguards for electroconvulsive therapy, and thus is suitable for out-patient practice.

Consciousness is retained during the stimulation, so that active participation of the patient is fostered. This is in contrast to shock therapy, in which the patient has an essentially passive role.

The unit employed by Nathaniel J. Berkwitz, M.D., is a relatively weak source of high-voltage electricity with a high internal impedance, providing a safe and constant current regardless of load. No electrode paste is required and the terminal voltage applied to the patient's head does not exceed 80 volts (r.m.s.). The spike wave produced has a frequency of about 300 to 400 cycles.

To assure proper psychotherapy, only a qualified psychiatrist should administer FSSP treatment.

Two electrodes held by a rubber band are applied to the temples, and 3¾ gr. of Sodium Amytal, dissolved in 5 cc. of distilled water, is given rapidly by vein. The patient is told to close the eyes and clench the teeth.

After about three seconds, when the drug begins to take effect, from 2 to 4 electric stimulations are given in rapid succession. Apprehensive patients are given a weak current initially.

Startled at first, the patient releases emotions by crying, laughing, or both. With a little reassurance, the individual relaxes and talks more freely about suppressed matters.

For purposes of suggestion in cases of conversion hysteria, the electrodes are placed over the affected areas. For example, in hysterical paralysis, the electrodes are placed over the involved extremity.

Since the treatments are only adjuncts to psychotherapy, the number is governed by the progress made. The first 2 or 3 are given once a day; the interval is then extended to biweekly and finally to weekly stimulation, until improvement is sustained. If no effect is noted after 10 treatments, the method is discontinued.

FSSP has been found to aid psychotherapy in simple depression, anxiety states, conversion hysteria,

Out-patient treatment with faradic (non-convulsive electric) stimulation. Dis. Nerv. System 13:3-12, 1952.

mild obsessive-compulsive states, somatization reactions, and some ambulatory cases of schizophrenia. Sustained improvement has been noted in about 63% of patients who have neuroses or psychoses.

Electroconvulsive therapy is effective for many types of psychiatric disorders, but is ineffective for illness best treated by FSSP. The latter has the added advantage of producing neither amnesia nor confusion. The patient without amnesia is better able to profit from psychotherapy given during the treatment, and the patient without confusion is able to continue working, maintain normal social activity, and avoid the psychologic trauma of confinement in a mental hospital.

Rapid Blood Typing

CHARLES P. EMERSON, M.D.

A RAPID method of mass typing of human blood is available for use in emergency situations. The technic, as described by Charles P. Emerson, M.D., of Massachusetts Memorial Hospital, Boston, permits accurate determinations in both ABO and Rh testing.

The finger tip of the individual to be tested is wiped clean with an alcohol sponge, punctured with a Bard-Parker blade, then wiped dry. A 5-mm. drop of blood is then squeezed onto the skin surface. The finger is introduced into a 3-oz. paper drinking cup processed with about 10% wax. The blood is smeared on the bottom.

One drop of grouping serum is added to 3 cups prepared in this manner, anti-A into the first, anti-B into the second, and anti-D into the third. Blood and serum are thoroughly mixed by a rotary movement, and a second drop of the same serum is added to each cup and allowed to stand for one minute.

The cups are then tilted on their sides, converting the mixture into a "falling film." If a reaction is positive, agglutination is usually apparent within five seconds after the tilt, unequivocal within thirty seconds. Up to sixty seconds may be required for the agglutination of A_2 and Du cells. If no agglutination is observed after two minutes of spontaneous sedimentation, the reaction is called negative.

Bottled blood may be examined by pouring an aliquot portion into 1 empty cup. This cup is then drained into a second and this, in turn, into a third. Drainage of all 3 cups is accomplished by inversion for at least five seconds. Then, with cups in an upright position, 2 drops of grouping serum are added to the blood films remaining in the bottom of the cups and the procedure is performed as above.

A new method for the rapid determination of blood groups in emergency situations. New York State J. Med. 53:532-533, 1953.

Angulation, decrease in height of the disks, and displacement signify disk affection.

Lumbar Intervertebral Disk Degeneration

E. HASNER, M.D., H. H. JACOBSEN, M.D., M. SCHALIMTZEK, M.D., J. SKÅTUN, AND E. SNORRASON, M.D.

Rigshospital, Bispebjerg Hospital, and Kommunehospital, Copenhagen

CHRONIC back pain and sciatica may result from degeneration of intervertebral disks, demonstrable by functional tests.

By roentgenograms made with the patient reclining and sitting and examination of the mobility of the lumbar column on forward, backward, and lateral bending, malfunction of the intervertebral disks may be shown. The condition is termed disk degeneration by E. Hasner, M.D., H. H. Jacobsen, M.D., M. Schalimtzek, M.D., J. Skåtun, and E. Snorrason, M.D.

Protracted low back pain is the chief symptom. Roentgenographically [1] a decrease is shown in the thickness of the disk on the film made in the sitting position as compared to the reclining, [2] a change is noted in angulation when the patient bends to one side, and [3] gliding appears on forward-backward bending. Normally, the roentgenograms of the lumbar spine show the height of the disks to be the same whether the subject is standing or reclining.

Most of the patients with disk degeneration are between 30 and 49 years old. Besides low back pain, the patients often have lancinating pain in one leg, accentuated by increased abdominal pressure and hyperlordosis. Paresthesias and sensations of chilliness and numbness in the legs are also common. The patients are frequently employed in heavy work or have had some trauma before onset of symptoms.

Determination of decrease in mobility

When the patient stands astride, the form of the spine may afford information about the condition.

Degeneration of lumbar intervertebral discs. Am. J. Phys. Med. 31:441-449, 1952.

The loins are flat, lordosis may be more pronounced, and lumbar kyphosis or reducible scoliosis is common.

Observation of movements of the lumbar column, forward, backward, and to the side is of utmost importance in establishing the diagnosis. Decreased mobility can appear as an abolition of lateral bending or as a kink in the usually smooth arc presented by the spinal processes through the skin. In about 50% of cases, the lowered mobility appears on the same side of the body as the pain.

The approximate decrease in mobility may be judged from the distance of the fingers from the popliteal space on sideward bending. The fingers normally reach this space (see illustration). Direct or indirect tenderness of the lumbar spine is common.

Disk degeneration is often not limited to one disk but narrowing of 2 or more intervertebral spaces is common. The frequency of recurrence in other disks after prolapse operation may be thus explained.

Planograms may be used to determine the height of a disk. A decrease is considered significant when a change of 5% or more in the area of the disk is noted when changing from the reclining to the sitting position. These are functional changes that are not obvious clinically and are rarely seen on roentgenograms of the patient in the reclining position.

Confinement to bed, followed by employment of stabilizing supporting corsets, may be sufficient therapy. Relapses indicate more pronounced injury. Sometimes the lesion progresses to disk prolapse.

¶ INFECTIOUS MONONUCLEOSIS that chiefly involves the central nervous system may cause symptoms resembling those of diffuse encephalitis and other neurologic syndromes. The cerebrospinal fluid may have a positive quantitative heterophil agglutination reaction, note Capt. Martin J. Freedman, M.D., and Lt. Lawrence T. Odland, M.D., U.S.A.F., and Col. Edward A. Cleve, M.D., U.S.A., of Letterman Army Hospital, San Francisco. A 21-year-old airman had a generalized convulsion and became irrational and semistuporous two weeks after onset of an upper respiratory infection. The Silberstein qualitative heterophil agglutination of the spinal fluid was 4 plus with sheep red blood cells and also guinea pig kidney, and the quantitative response with the Paul-Bunnell method was positive in a titer of 1:28. Blood agglutination was observed in dilutions of 1:1,792 at two hours and 7:3,584 overnight. When the patient was discharged one month after admission, the blood and qualitative cerebrospinal fluid reactions were still positive but the quantitative had become negative. An electroencephalographic pattern suggesting encephalitis reverted to normal in a month.

Arch. Neurol. & Psychiat. 69:49-54, 1953.

A purpura-like eczematid skin condition characterized by capillary fragility is encountered in Greece.

Eczematid-like Purpura

C. DOUCAS, M.D., AND J. KAPETANAKIS, M.D.
Evanghelismos Hospital, Athens, Greece

A SKIN disease of obscure etiology has recently been identified and named eczematid-like purpura. The outstanding feature is capillary fragility.

The condition resembles several other forms of dermatitis, such as Majocchi's purpura, but has distinguishing manifestations.

A description is presented by C. Doucas, M.D., and J. Kapetanakis, M.D., who made detailed studies in 129 cases. Frequency of the condition suggested an epidemic, since 48 patients with the disease were encountered in the out-patient department of the Evanghelismos Hospital, Athens, in 1949, 45 in 1950, 65 in 1951, and only 19 in 1952. Both new and recurrent eruptions appeared mainly from March to August and abated in winter.

The patients are usually adults, 40 to 50 years of age, although the range is at least 7 to 72 years. Women are affected more often than men, in a ratio of nearly 3 to 2.

Onset is often unnoticed because no general or local symptoms such as fever or pain are felt. Eruption appears first on the legs, usually above the ankles, as closely stippled, bright red, pinhead-sized spots that do not vanish under pressure. Hemorrhagic points may form irregular groups or fuse into dark red plaques with uneven, poorly defined outlines.

Dermatitis spreads upward serpiginously and symmetrically over the lower legs and thighs. In some cases, lesions extend to dorsal surfaces of the feet, the gluteal region, around the waist, and over the arms. Occasionally the chest is involved, but never the face, neck, palms, or soles.

Eruption develops for fifteen to thirty days. Color slowly becomes darker and later turns brown and yellow.

Slight scaling is generally seen, and rarely lichenification or papules. Itching and burning may be experienced.

Fresh lesions occur on the body in waves, superimposed on old eruptions or spreading from the margins. Occasionally, attacks subside completely for two months, then return.

Disease lasts for a few months to two years. Though hemosiderin discoloration may persist for a long time, in most instances all traces of spots and plaques eventually disappear.

In diagnosis, eczematid-like pur-

Eczematid-like purpura. Dermatologica 106:86-95, 1953.

pura must be differentiated from a number of eruptions:

• *Pigmented purpuric lichenoid dermatitis of Gougerot and Blum* is recognized by papules with telangiectasis and purpuric changes. Scaling is rare.

• *Progressive pigmented dermatitis of Schamberg* causes intense pigmentation, with a few exanthematous elements and very rarely atrophy. This rash is infrequent, affects men almost exclusively, and continues many years.

• *Purpura annularis telangiectodes of Majocchi* produces spots in circinate arrangement with a pigmented center and is seldom atrophic.

• *Purpura telangiectodes arciformis of Touraine* differs from types just listed in that eruptive elements are isolated.

• *Angioma serpiginosum of Hutchinson* has atrophic tendencies and induces neither purpura nor pigmentation.

• *Allergic purpuric drug eruption* is like the disease in question, but duration is short.

• *Purpura resembling Schamberg and Gougerot types* may develop a week to ten days after an upper respiratory infection, for example, on the legs of recent military recruits subjected to considerable marching.

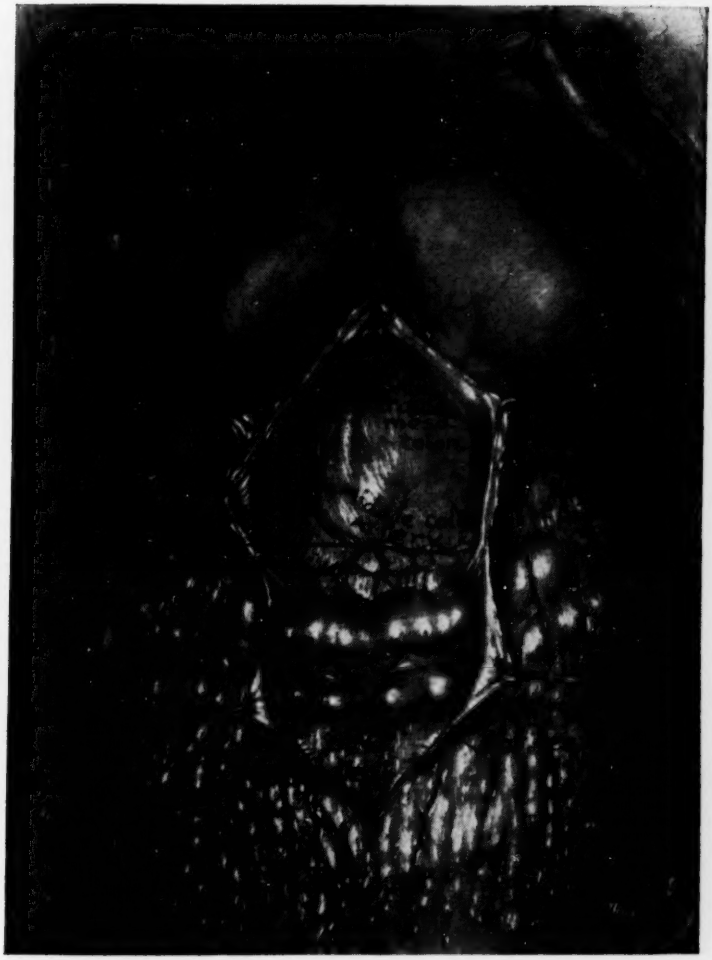
• *Simple hemosiderosis or purpura of increased capillary permeability*, discussed by Kierland, results in no scaling or lichenification.

Treatment of eczematid-like purpura is the same as for capillaritis. Eruption may be lessened by a combination of vitamin C and rutin given in daily oral doses. Locally, a 1% solution of iodine in alcohol is helpful. Pruritus may be relieved by antihistamine therapy.

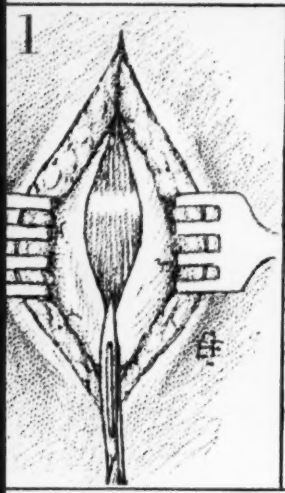
¶ ATOPIC DERMATITIS and other dermatoses often improve when a 1% hydrocortisone (compound F) acetate ointment is applied topically. Improvement occurs in some cases of pruritus vulvae and ani lichen chronicus simplex, nummular eczema, and distinctive exudative discoid and lichenoid chronic dermatosis. Among 62 patients treated for as long as thirty-five weeks with the 17-hydroxycorticosterone-21-acetate, Marion B. Sulzberger, M.D., and Victor H. Witten, M.D., of New York City and C. Conrad Smith, M.D., of Augusta, Ga., found no instances of sensitization, no adverse systemic effects, and no contraindications. The base usually employed consists of zinc stearate, propylene glycol, polyethylene glycols, and water. Good effects are often noticed within the first forty-eight hours of therapy and are usually obvious after a week. Benefit ordinarily ceases within four or five days after discontinuance of medication. The therapeutic effectiveness of a 2.5 or 5% concentration is not sufficiently greater to warrant the increased cost. The steroid was valueless for the treatment of psoriasis, chronic discoid lupus erythematosus, pemphigus vulgaris, and alopecia areata. *J.A.M.A. 151:468-472, 1953.*

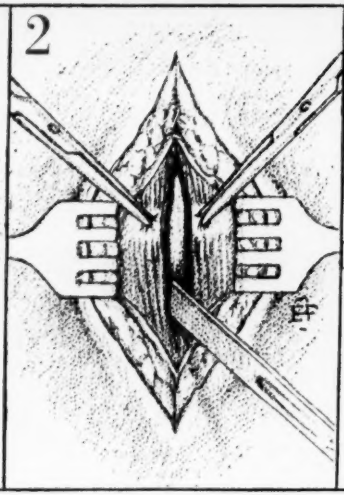
Transverse Colostomy

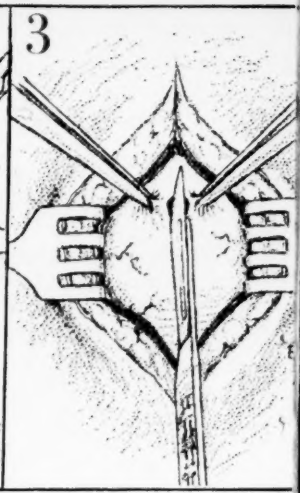
F. M. AL AKL, M.D.
Kings County Hospital, Brooklyn



KEEP THIS PICTURE IN MIND







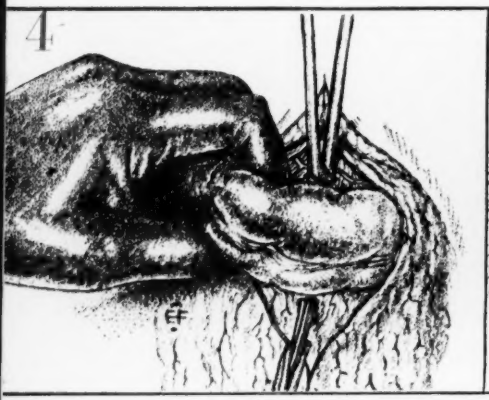
1 Make a vertical 10-cm. incision over center of supraumbilical half of right rectus muscle. Continue incision through subcutaneous fat and anterior rectus sheath exposing rectus muscle.

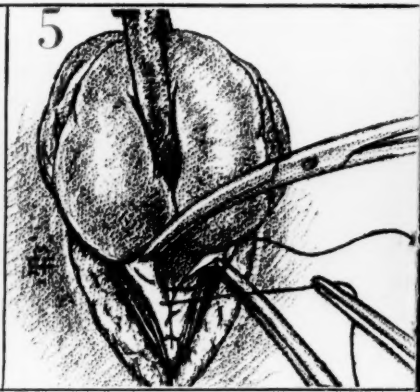
2 Clamp both sides of transverse tendinous lines; cut between; separate remaining muscle fasciculi.

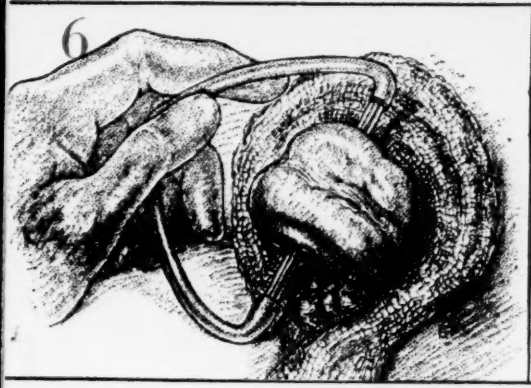
3 Pick up and incise exposed posterior rectus sheath and underlying peritoneum to length of incision.

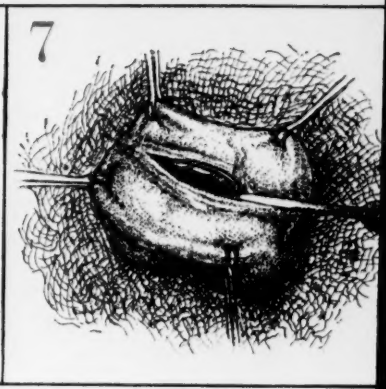
4 Lift omental apron with attached transverse colon into wound. Bare colon of adherent gastrocolic ligament over proposed colostomy site. Pick up bare segment of transverse colon; introduce clamp through an avascular spot at mesenteric border of colon and out through posterior leaf of omental apron; pull rubber tissue through and clamp for traction.

5 Reposit omentum and excess colon into abdominal cavity. Clamp and approximate the fascioperitoneum about emerging loop.









6 Approximate separated rectus fibers and anterior rectus sheath on either side of loop. Close skin with 1 or 2 sutures on either side, then replace rubber loop with glass rod, attaching rubber tubing to the ends.

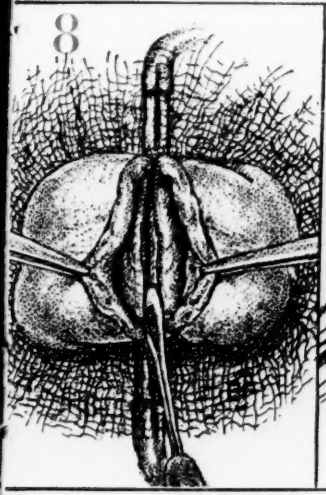
7 For temporary colostomy, open bowel with cautery over antimesenteric border.

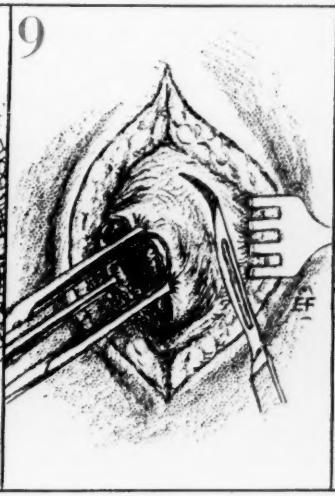
8 For permanent colostomy, open bowel transversely over glass rod.

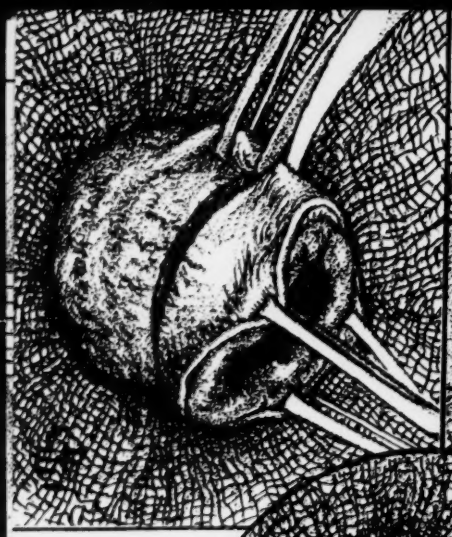
CLOSURE

9 Make an elliptic incision beyond scar surrounding ostium. Clamp ostial edges, retract skin, and continue incision down to anterior rectus sheath.

10 Free colon from adherent rectus muscle fibers past fascioperitoneum.







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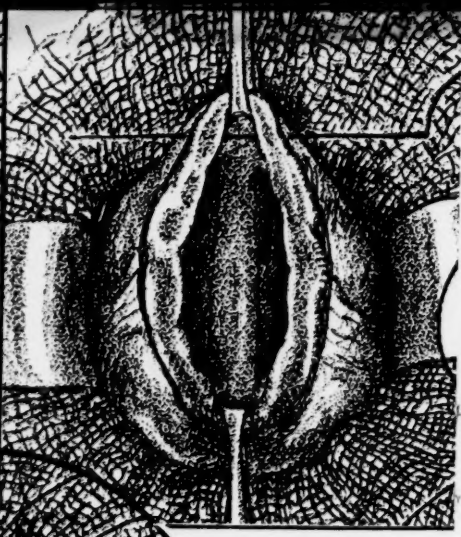

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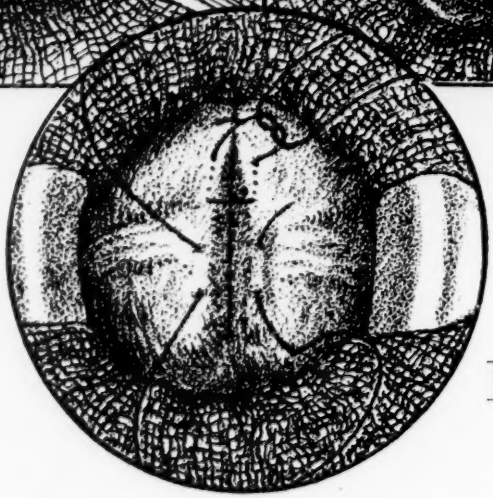

13

11 Introduce gauze pack around bowel; excise scarred ostial rim.

12 Clamp cut edges; start inversion suture at transverse stomal angle.

13 Continue suture transversely, inverting entire thickness of bowel wall. Reinforce suture line with coaptation row of sutures. Remove packing; drop sutured bowel. Approximate fascioperitoneum, then suture the anterior rectus sheath with the adherent rectus muscle. Approximate the skin over a drain in the subcutaneous fat.

NOTES

The transverse or sigmoid colon is the favorite colostomy site. The transverse is particularly suited for preliminary colostomy, the right half being the most accessible. The bowel is opened shortly after the dressing is secured or in a day or so, depending on distention. For temporary colostomy, the bowel is opened with cautery over the antimesenteric border; for permanent, the bowel is cauterized halfway across and in a week section is completed by cautery over the glass rod.

Special Article

Index of Coronary Artery Atherogenesis

JOHN W. GOFMAN, M.D.,* BEVERLY STRISOWER, OLIVER DE LALLA, ARTHUR TAMPLIN, HARDIN B. JONES, PH.D., AND FRANK LINDGREN

Division of Medical Physics, Donner Laboratory, and the Radiation Laboratory, Department of Physics, University of California, Berkeley

PROGRESS in effective prophylactic and therapeutic measures for coronary heart disease has been seriously impeded by inability, at the clinical level, to assess the rate of development of the underlying pathologic process—coronary artery atherosclerosis.

Students of this problem are widely agreed that the sites of predilection and the degree of coronary atherosclerosis depend upon a local factor in the arterial wall and a general factor in some way resident in the circulating blood lipids. Ultimately the rational clinical management of the coronary heart disease problem must encompass both types of factors. At this time our knowledge of the general factor is much nearer to the position of practical clinical utility than is that of the local factor.

The contributions of numerous investigators have pointed to a close association of disturbances in serum lipid transport with human coronary heart disease. At present it appears quite probable that certain of the circulating blood lipids may, in fact, represent the source of the lipid deposits in atherosclerotic coronary arteries. This last concept cannot be proved conclusively now, nor may its validity be subject to direct test for a long time.

However, it can be demonstrated beyond reasonable doubt that a strong quantitative relationship exists between elevation of certain blood lipids and accelerated progression of coronary heart disease. Whatever the etiology of the blood lipid disturbance, the working hypothesis that the particular blood lipid fractions may directly provide the lipids of atheromas affords a reasonable basis for the clinical attack upon coronary heart disease. Thus, as measures effective in reducing the concentration of the possibly offensive blood lipid fractions are developed and applied widely, the clinical results themselves will determine the fruitfulness or the errors of the original concept. A primary need in evaluation of this hypothesis is identification of the particular blood lip-

*Associate Professor of Medical Physics, University of California, Berkeley.

¶ This work was supported in part by the National Heart Institute of the U. S. Public Health Service and the U. S. Atomic Energy Commission.

Table 1. AVERAGE ATHEROGENIC INDEX VALUES

Diagnosis	*Cases*	*Age*	*Sex*	*Index*
Normal	29	20-29	M	**59**
	284	30-39	M	**70**
	473	40-49	M	**74**
	267	50-59	M	**75**
	74	60-69	M	**73**
	50	20-29	F	**46**
	188	30-39	F	**51**
	140	40-49	F	**61**
	80	50-59	F	**71**
	9	60-69	F	**84**
Coronary heart disease	9	30-39	M	**114**
	91	40-49	M	**95**
	148	50-59	M	**91**
	61	60-69	M	**84**
Diabetes mellitus	32	30-49	M	**86**
	37	50-69	M	**81**
	7	30-49	F	**90**
	19	50-69	F	**104**
Hypertension*	64	30-39	M	**78**
	106	40-49	M	**79**
	104	50-59	M	**78**
	52	60-69	M	**79**
	25	30-39	F	**59**
	49	40-49	F	**68**
	89	50-59	F	**72**
	6	60-69	F	**73**

*Hypertension here includes individuals either with a systolic pressure greater than 142 mm. of Hg or with a diastolic pressure greater than 92 mm. of Hg.

ids involved and a determination of the extent of their association with human coronary heart disease.

Intensive study in the past two decades has revealed that such well-known lipid constituents of serum as cholesterol, cholesterol esters, phospholipids, and fat (glyceryl ester) do not exist as such in the blood. These substances are, instead, building blocks of a series of lipoproteins (substances containing a variety of lipids in chemical association with proteins).

By utilizing the ultracentrifuge we have been able to develop a methodology for characterization and quantitation of essentially all the serum lipoproteins. A convenient method for naming and classifying the lipoproteins is based upon the rate of flotation, under defined conditions, of the various lipoproteins in an intense centrifugal field. The unit of flotation rate is the "Svedberg of flotation" or the S_f unit.

Thus a single lipoprotein may be

referred to by its flotation rate as, for example, an S_f4 or an S_f10 lipoprotein. If a series of lipoproteins is under consideration, as is so often the case with serum, one may refer to the sum of the concentrations of all the lipoproteins between arbitrary flotation rate limits—for example, the concentration of S_f10-20 lipoproteins is the sum of the concentrations of all lipoproteins floating with rates between S_f10 and S_f20.

In several previous reports our research group has pointed out that two measured classes of serum lipoproteins, the S_f12-20 and S_f20-100 classes, show strong positive associations with human coronary heart disease. Our continuing endeavors have been concerned with improvements in the methodology of assessing those lipoproteins related to coronary disease and with the integration of the information obtained into a practical, clinically useful form.

On the technical side, the analytical procedure has been improved in accuracy by quantitatively accounting for the self-slowing of flotation rate of lipoproteins as their concentration increases. The details of this improved analytical procedure will be published elsewhere. However, in the measurements reported here, a modified designation of the lipoprotein groups will be used to indicate that the corrections for concentration effects have been made. The lipoprotein classes measured by the new method will carry the designation "Standard." Thus reference will be made to the "Standard S_f0-12" class, the "Standard S_f12-20" class, and so on.

An ideal compendium of the pertinent information on lipoprotein would be a single number descriptive of an individual's coronary atherogenic potentialities, or rate of development of coronary atherosclerosis. A method does exist for obtaining such a single value. This value may be referred to as *an index of coronary atherogenicity*.

The premises inherent in the procedure for determining such a value appear quite safe. Basically we accept the clinicopathologic knowledge that the average human being known to have clinical coronary heart disease will show *more* coronary artery atherosclerosis than the average human being of the same age and sex who does not have clinically manifest coronary heart disease. It is, of course, fully anticipated that many clinically normal individuals have *some* coronary atherosclerosis.

In a study of 239 males with clinical coronary heart disease and 740 males of corresponding ages (40 to 59 years), two major lipoprotein classes have been measured, the Standard S_f0-12 and Standard S_f12-400. Both of these classes are significantly elevated in frank coronary heart disease. The determination of the index of coronary atherogenicity requires assessment of the relative importance of each group for coronary disease.

Application of the method referred to above leads to the conclusion that intrinsically every milligram per cent of Standard S_f12-400 lipoprotein is 1.75 times as

important for atherogenesis as is every milligram per cent of Standard S_f0-12 lipoprotein. The arithmetic involved in converting this information into an atherogenic index is simple.

known to allow such comparisons to be made.

Variation with age—The average degree of coronary artery atherosclerosis has been shown by White and Ackerman and their associates

ARITHMETIC OF THE ATHEROGENIC INDEX

Let A.I. denote the index of coronary atherogenicity. Then,

$$\text{A.I.} = \frac{\text{mg. \% Standard } S_f0\text{-}12 + 1.75 \times \text{mg. \% Standard } S_f12\text{-}400}{10}$$

(The denominator of 10 is used arbitrarily to provide a convenient scale of values.)

For illustrative purposes, 2 individuals may be considered.

Patient A has a level of Standard S_f0-12 = 300 mg.%
Standard S_f12-400 = 100 mg.%

$$\text{A.I.} = \frac{300 + (1.75 \times 100)}{10} = 47.5 \text{ units}$$

Patient B has a level of Standard S_f0-12 = 100 mg.%
Standard S_f12-400 = 214 mg.%

$$\text{A.I.} = \frac{100 + (1.75 \times 214)}{10} = 47.5 \text{ units}$$

Thus both patients have the same atherogenic index value even though their respective lipoprotein concentrations differ. With Patient A most of the atherogenicity arises from the Standard S_f0-12 lipoproteins. With Patient B most of the atherogenicity arises from the Standard S_f12-400 lipoproteins.

In Table 1 are given the average atherogenic index values for the 2,493 cases which form the basis of this report.

A useful way of determining whether the atherogenic index values obtained really reflect atherosclerotic activity is to compare the findings with established clinical experience. No hypothesis can claim validity if it is contrary to such experience in a quantitative way. Enough salient features concerning coronary atherosclerosis and clinical coronary heart disease are

to increase in both sexes between the ages of 20 and 60 years. In the male sex the average coronary sclerosis levels off and may decrease beyond 60 years, whereas in females the rising trend continues.

In Figure 1 are shown the changes in atherogenic index (as measured above) with age and the changes in average coronary sclerosis with age. There is a striking qualitative similarity between the corresponding curves, and quantitatively the values are quite consistent with the concept that ath-

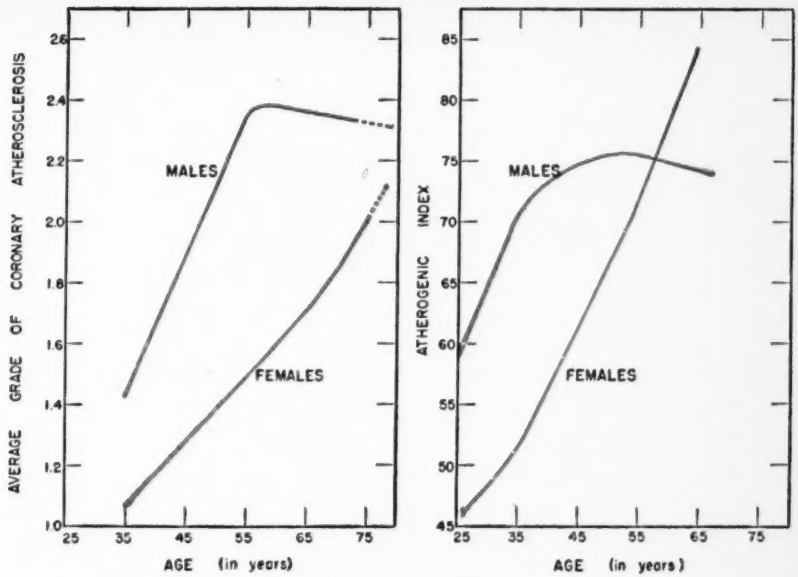

Fig. 1. Comparison of the age trends in average degree of coronary atherosclerosis and atherogenic index. The smoothed curves for average degree of coronary atherosclerosis with age are prepared from the data of Ackerman and associates.

erogenesis proceeds with a rate proportional to the measured atherogenic index values. Not only do the age trends for atherogenic index parallel the changes in average coronary atherosclerosis, but also the ratio of male atherogenic index to female atherogenic index at a single age is consistent with the ratio of degree of coronary atherosclerosis for males as compared with females.

A closely related clinicopathologic finding is that, in spite of the average increase in coronary atherosclerosis with age between 20 and 60 years, certain individuals reach 60 years with minimal atherosclerosis whereas others demonstrate severe grades of the pathologic process. From the range of atherogenic index values found at a single age, for example, 60 years, the prediction would be made that about 4 times as severe grades of coronary atherosclerosis would be expected for the highest 10% of the population as compared with the lowest 10%. Thus the atherogenic index measurement is in agreement with the pathologic observations that severe atherosclerosis does *not* inevitably accompany chronologic aging but may show considerable variation from individual to individual at a single age.

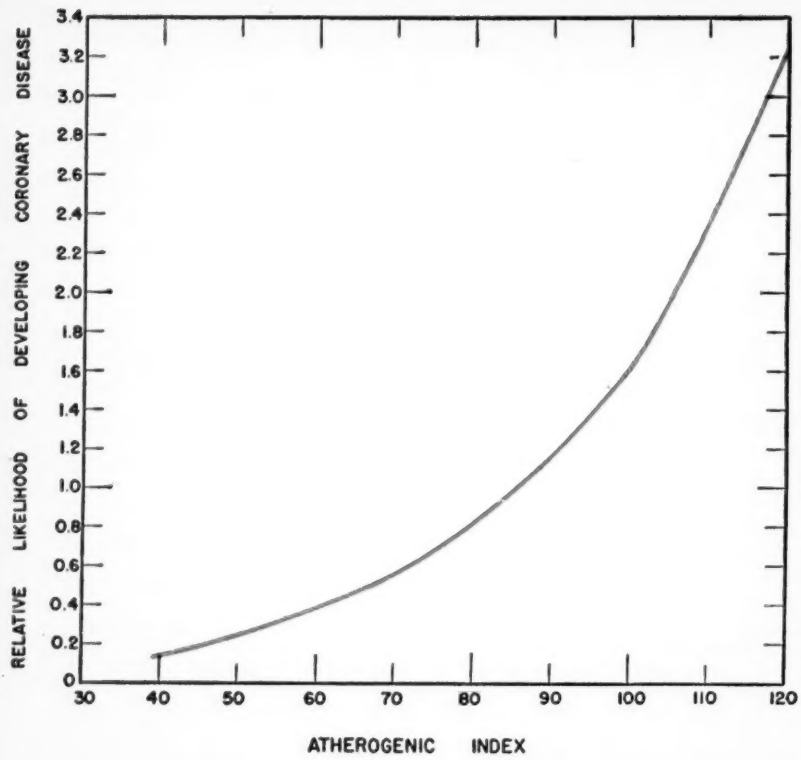

Fig. 2. Increase in relative likelihood of development of clinical coronary heart disease with increasing atherogenic index.

Incidence in males and females—One of the most striking features about clinical coronary heart disease is that the male sex is much more frequently afflicted in early life, but that, with increasing age, the chance of development of frank coronary disease approaches equality for the sexes. In the age group below 40 years, the relative predominance of the male is reported as between 2 and 20 times that of the female. However, above 60 years of age the incidence of clinically evident coronary disease is not strikingly different for males as compared with females.

It is of interest to know whether this would be predicted from the atherogenic index measurements. A comparison of the index values in normal persons with values in patients who have coronary heart disease provides the information necessary to construct a plot showing the relative likelihood of develop-

Table 2. RELATIVE PROBABILITY OF CORONARY HEART DISEASE

Age	*Likelihood (M) / Likelihood (F)*
30-39	2.0
40-49	1.6
50-59	1.1
60-69	0.7

Taken as they stand, these numbers would suggest a relative frequency of coronary disease in 30- to 39-year-old males twice that in females, with a steady drop in this relative frequency with age. Actually the numbers are undoubtedly somewhat low because they do not take into account *accumulated* atherosclerosis from previous decades. The value of 2 in the 30 to 39 group would be further increased if the small number of patients with coronary disease who show low atherogenic index values represent, in part, erroneous diagnoses. In any event the plot gives the prediction that if males are 3 times as likely to develop coronary disease at 35 years of age, they would be approximately equally likely to do so at the age of 65. This is in reasonable accord with clinical experience.

ment of clinical coronary heart disease for each value of the atherogenic index value in clinically normal individuals. Such a plot is shown in Figure 2. If the average values of the atherogenic index are taken from Table 1, one may obtain from Figure 2 a value for the relative probability of the development of clinical coronary heart disease. This was done for both males and females at various ages, with the results listed in Table 2.

Accumulation with age—The studies of White et al. and Ackerman et al., quoted above, demonstrate the increasing average degrees of coronary atherosclerosis with increase in age. Therefore, except for the benefit conferred by collateral circulation, an old individual might be expected to reach a marginal myocardial oxygen supply at a lower level of atherosclerotic activity than would a young one simply because the older person has somewhat narrowed coronary arteries from accumulated atherosclerosis of previous years.

This would lead to the expectation that young males with coronary heart disease should have greater atherosclerotic activity than older males with the disease. Further, one would expect that the difference between the group with coronary disease and the clinically normal group should decrease with increase in age. Both these expectations are in accord with the findings with respect to atherogenic index measurements (Table 3).

Table 3. EFFECT OF AGE UPON DIFFERENCE BETWEEN ATHEROGENIC INDEX IN CORONARY DISEASE AND IN HEALTH (MALES)

Age	*A.I. in Coronary Disease*	*A.I. in Health*	*Difference*
30-39	114	70	44
40-49	95	74	21
50-59	91	75	16
60-69	84	73	11

These data bring out another pertinent point. Several investigators have suggested that coronary artery disease in the young has a different etiology from that in older persons because the differences in serum cholesterol levels between individuals who have coronary disease and "normal" persons decrease with increase in age. The considerations above would indicate that such a concept of multiple etiologies is superfluous, since on a unitarian basis the observed results are precisely those to be expected.

Relation to diabetes mellitus—Diabetes is quite generally conceded to be characterized by excessive coronary atherosclerosis and clinical coronary heart disease.

Table 4. ATHEROGENIC INDEX IN DIABETES AND IN HEALTH

Male	
Diabetic	83
Normal	74
Female	
Diabetic	101
Normal	68

The above comparisons with normal persons (*matched* by age and sex) were obtained from the atherogenic index values for 69 male diabetic patients and 26 female diabetics, all ambulatory and out of ketosis. Individuals were all between 30 and 69 years of age.

The differences between diabetic and normal individuals are significant in both sexes. The female diabetic is much higher in atherogenic index relative to the nondiabetic female than the male diabetic is relative to the nondiabetic male. This finding is compatible with the clinical observation that atherosclerotic complications are relatively more severe in diabetic females than in diabetic males.

By use of the plot of relative probabilities of occurrence of clinical coronary heart disease, one may estimate that the male diabetic has approximately 1.4 times the likelihood of developing clinical coronary heart disease as the nondiabetic male of the same age in a comparable period of time. The diabetic female has approximately 3 times the likelihood of development of coronary disease as the nondiabetic female of the same age. Absolute figures from clinical experience are not available, but certainly these estimates obtained by means of the atherogenic index are reasonable.

From the data of Ackerman et al. the average degree of coronary artery atherosclerosis in diabetic females is 1.4 times as great as in nondiabetic females matched by age in the range from 30 to 69 years. In this same age range the atherogenic index is 1.5 times as high in diabetic females as in matched nondiabetic females. This close accord supports the view that the atherogenic index does give a measure of the factors which predispose the diabetic to excessive and premature atherosclerosis.

Association with hypertension—Hypertension is commonly referred to as a factor predisposing to the development of clinical coronary heart disease, although the extent to which it operates is not adequately known. The average atherogenic index values in Table 1

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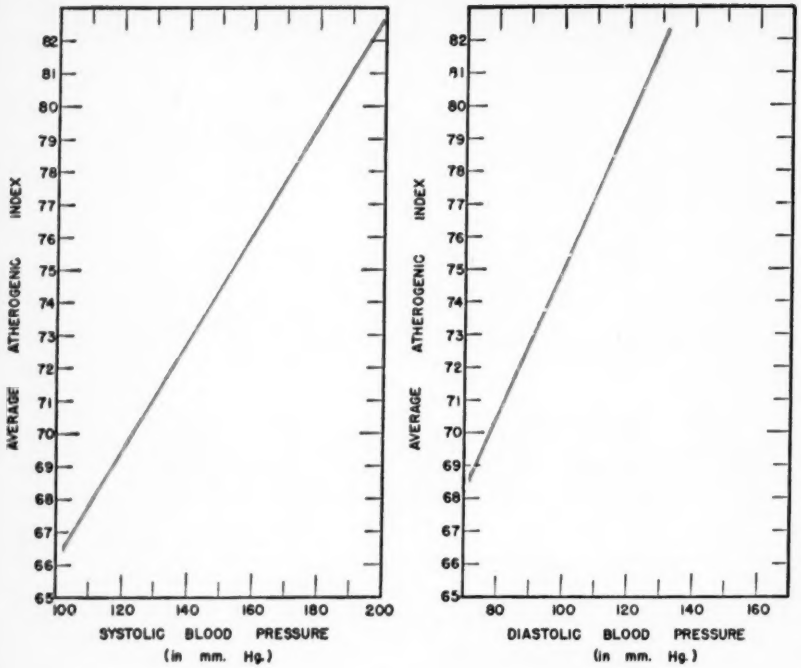

Fig. 3. Relationship of atherogenic index with systolic and diastolic blood pressures, based upon analysis of 313 males in the 30- to 39-year age range.

for both sexes in the age range of 30 to 60 years is higher for individuals with elevated blood pressures than for those without elevated pressures. In Figure 3 is a representative plot showing the actual rise in average atherogenic index values with rise in systolic and diastolic blood pressures, respectively. This rise in atherogenic index is, on the average, not large although it is significant.

From the measurements we would not predict that the average hypertensive should have much more coronary atherosclerosis than the average normal person. For example, if male subjects with diastolic pressures of 110 mm. of mercury are compared with those having diastolic pressures of 80 mm. of mercury, the predicted atherogenic potentialities are approximately 10% higher. No clinical data are available for a precise comparison with this estimate.

However, White and associates found in the male that the heavier hearts examined (presumably from individuals with higher than normal blood pressure) showed 5 to 10% more coronary atherosclerosis than

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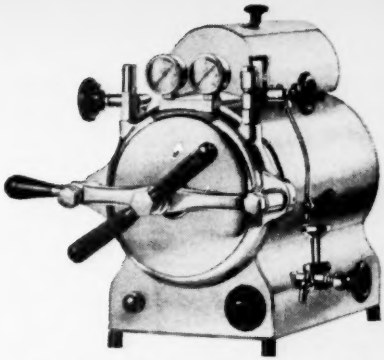

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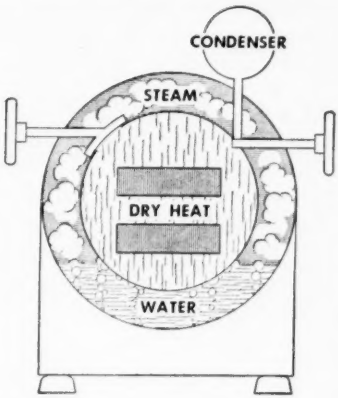

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the lighter hearts (presumably from individuals with normal blood pressures). The general agreement between their direct observations on the degree of coronary sclerosis and the predictions made on the basis of the atherogenic index can be regarded as good, even though more ideal material for comparison would be desirable. In any event, both studies lead to the conclusion that although hypertension is associated with increased severity of coronary sclerosis, the effect is only moderate.

Overnutrition—Though contested by some observers, the concept that overnutrition and its sequel, overweight, are associated with excessive coronary heart disease has firm support from several recent studies. Thus Dublin and Marks have shown conclusively that the excess mortality in Metropolitan Life Insurance policyholders resulting from heart disease, including coronary heart disease, is related to the degree of overweight. In both sexes and for all ages between 30 and 69 years of age the atherogenic index shows an average increase as there is an increase in weight compared with ideal weight. This information is summarized in Figure 4. From these data we may obtain the average atherogenic index for individuals 40% above their ideal weights. Then by referring to Figure 2 we may estimate that individuals 40% over-

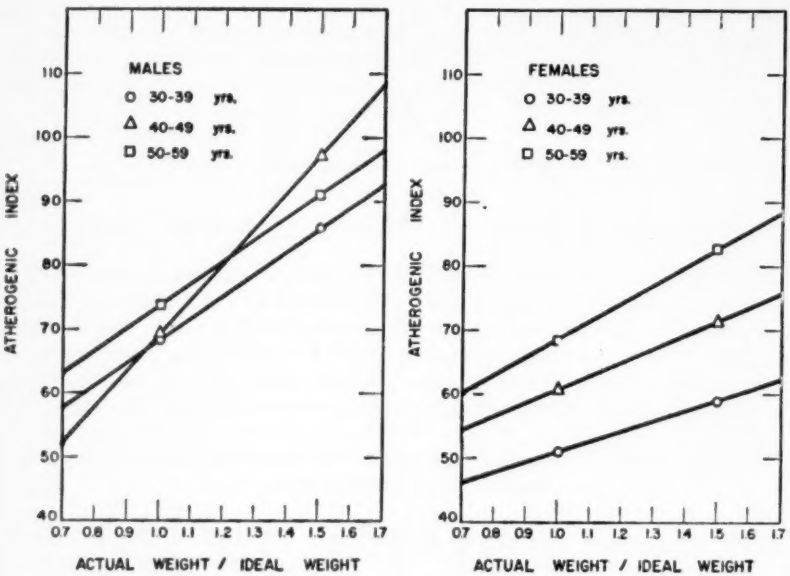
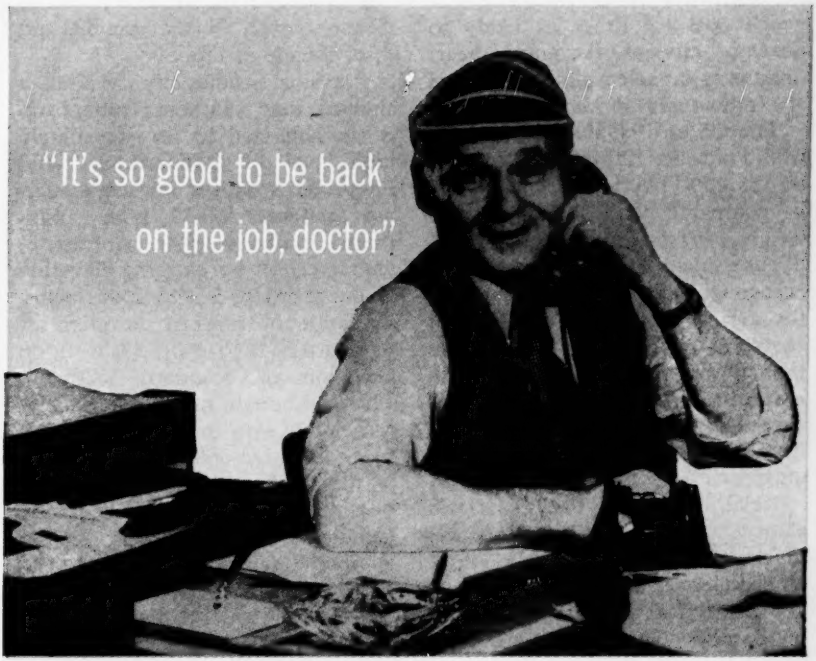


Fig. 4. The change in atherogenic index with deviations from ideal weight.



TABLET

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weight are 1.5 times as likely to develop clinical coronary heart disease in a given time period as are individuals of ideal weight.

The tables of Dublin and Marks would indicate 1.5 times the mortality for 40% overweight individuals as compared with those of ideal weight. Inasmuch as chronic heart disease, including as a major part coronary heart disease, accounts for a large part of their observed excessive mortality, we may regard their findings as being in excellent agreement with the prediction of excess coronary heart disease risk from our atherogenic index measurements.

Ackerman and his associates showed an average 12% increase in the degree of coronary artery atherosclerosis in individuals at or above average weight as compared with underweight individuals. Unfortunately they do not list the actual weights of their individuals. From Figure 4, individuals who are 10% overweight have approximately a 10 to 15% greater atherogenic index than do individuals who are 20% below ideal weight. Thus, even without actual weights in the Ackerman study, it is evident that the atherogenic index is giving a very reasonable estimate of the relationship of obesity and excessive coronary atherosclerosis.

Association with xanthomatoses—Two disease entities, xanthoma tuberosum and xanthoma tendinosum, are well known to be associated with early development of coronary heart disease. It is, in fact, in these groups that clinical coronary heart disease is not infrequent even in the second and third decade of life.

Previous studies by McGinley showed that xanthoma tuberosum is characterized by an exceedingly high level of Standard S_f12-400 lipoproteins with a low or moderate Standard S_f0-12 level. Xanthoma tendinosum, in contrast, is characterized by extreme elevation of the Standard S_f0-12 lipoproteins, moderate or marked elevation of Standard S_f12-20, and little or no elevation of Standard S_f20-400. Thus, although the atherogenicity associated with these two types of xanthomatosis arises predominantly from different lipoprotein fractions, the net effect is a greatly heightened atherosclerotic activity in both states.

REPRESENTATIVE CASES

Xanthoma tendinosum:
Standard S_f 0-12 = 966 mg.%
Standard S_f 12-400 = 446 mg.%

$$\text{A.I.} = \frac{966 + (1.75 \times 446)}{10} = 175$$

Xanthoma tuberosum:
Standard S_f 0-12 = 211 mg.%
Standard S_f 12-400 = 827 mg.%

$$\text{A.I.} = \frac{211 + (1.75 \times 827)}{10} = 166$$

Both types of xanthomatosis are seen to have atherogenic index values far above even the highest averages for groups of individuals with clinical coronary heart disease. The plot of Figure 2 would indicate that an individual with either xanthoma tendinosum or xanthoma tuberosum is at least 5 times as likely (and probably more) to develop clinical coronary heart disease as the average normal person of the same age and sex.

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Supplied as the DAINITE UNIT containing 48 Day Tablets and 18 Nite Tablets in a unique dispensing unit. Day and Nite tablets are also available separately, to simplify prescription and refill according to individual needs.

References: (1) Segal, M. S.: Springfield, Charles C. Thomas, 1950, p. 83; (2) Barach, A. L.: J.A.M.A. 147: 730-737, 1951; (3) Segal, M. S., et al.: Ann. Allergy 9: 782-793, 1951; (4) Bickerman, H. G., and Beck, G.: Personal Communication.

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Give t.i.d.a.c.		Give at 10 P.M.

This is consistent with the inordinate predisposition of individuals with xanthomatosis of either type to develop clinical coronary heart disease even in early life.

All the above considerations indicate that the prediction of degree of coronary atherosclerosis and the relative likelihood of development of clinical coronary heart disease by means of the atherogenic index based upon lipoprotein measurement is not only in qualitative agreement with established clinical and pathologic experience but is also in very good quantitative agreement. To our knowledge, no evidence may be adduced from clinical sources that is at variance with the concept that the atherogenic index does provide a measure of relative atherogenic potentialities among human beings.

Significance of index—The clinician concerned with the problem of decreasing coronary heart disease faces two major problems. First he must be able to identify the individuals who are most likely to be candidates for coronary heart disease and to assess their relative likelihood of early development of this disease. Second he needs a method for assessing the efficacy of a preventive or therapeutic regimen. Properly used, the atherogenic index measurement should fulfill both clinical requirements.

Predictively it is of great value to know that an individual with an atherogenic index below 50 units, for example, is about 5 times less likely to develop clinical coronary heart disease than an individual with an atherogenic index above 90 units. In practical terms this means that, for the 20% of men in the age range of 30 to 60 years whose atherogenic index is below 50 units, coronary heart disease does not represent a significant hazard.

In contrast, for the 20 to 25% of men of the same age with atherogenic index values above 90 units, coronary heart disease is a real threat. Such patients deserve serious consideration for trial of any safe method of reducing the atherogenic index *before* coronary heart disease has become manifest.

An important issue needs stressing in this regard. One might raise the question of the value of even small reductions in the atherogenic index, such as 25% reduction. If we consult Figure 2 we find that for a person who starts with a high atherogenic index (120 units), a reduction of the index by 25% should reduce the likelihood of coronary disease to approximately one-half its original level. Fortunately there exist many individuals with high atherogenic index values whose values may be lowered by 25% or more through measures already available to the clinician.

Thus, correction of obesity will accomplish this for many persons who carry an inordinate risk of coronary heart disease. In other individuals the restriction of total dietary fat will produce the same results. Cutting the coronary heart disease hazard in half for such individuals certainly cannot be overlooked.

On the less optimistic side it

(Continued on page 138)

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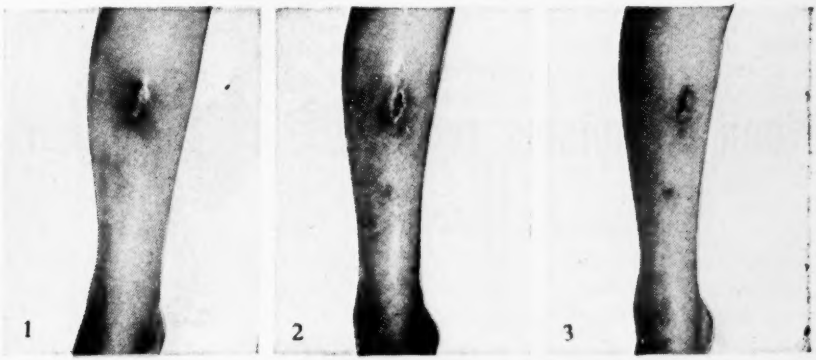

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must be borne in mind that neither measure—obesity correction or a low-fat diet—is universally applicable. For reasons not at all understood at this time, some individuals do not show the desirable lowering of atherogenic index. But universally effective therapeutic regimens are the exception in medicine rather than the rule. There is good reason to believe that with the availability of the information that it is the atherogenic index that we are trying to reduce, progress in the development of additional effective procedures will be accelerated.

A further question that occurs to the clinician is whether the simple serum cholesterol determination, reliably performed, can give the same information that the atherogenic index gives. Unfortunately, the serum cholesterol determination, while better than nothing at all, falls far short of providing the information contained in the atherogenic index.

In Table 5 are listed some randomly chosen atherogenic index values found for three cholesterol level ranges, low cholesterol (195-205), moderately elevated (295-305), and high cholesterol (395-405). From the values listed in this table we may draw certain conclusions:

1] At low serum cholesterol levels the atherogenic index in some individuals is more than twice that in others. Thus, whereas the serum cholesterol level would lead to the prediction of equal atherogenic potentialities for all these individuals, some are in actuality characterized by twice the atherogenic potentialities of others. If an even larger series were considered, individuals of 4 times the atherogenicity of others with identical serum cholesterol levels would be found.

Table 5. OBSERVED A.I. AT VARIOUS LEVELS

*Low**	*Moderate†*	*High‡*
49	79	99
57	73	62
75	135	97
34	99	72
57	67	110
64	130	121
75	86	100
52	90	108
40	143	66
44	74	
88	91	
57	88	
48	71	
58	63	
72	119	
51	118	

*Cholesterol (range, 195-205 mg.%)
†Cholesterol (range, 295-305 mg.%)
‡Cholesterol (range, 395-405 mg.%)

2] At moderately elevated serum cholesterol levels the same situation exists and, in addition, some individuals will be found who represent coronary heart disease risks many times that which would be predicted for the average of this group.

3] At high serum cholesterol levels both methods will in general predict that some excess hazard of coronary heart disease exists. However, even within this group, the atherogenic index will allow for differentiation of some individuals who may be 3 or 4 times as likely risks for coronary disease as others within the same group.

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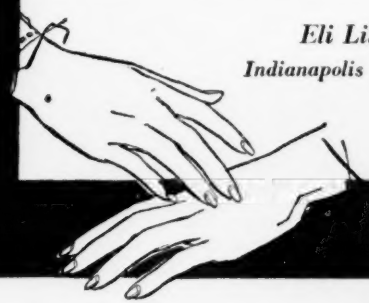

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Still another reason exists, of perhaps much greater importance, for assessment of the atherogenic index rather than the serum cholesterol level. In the process of determining the atherogenic index, information is gained as to what part of the total atherogenicity comes from the Standard S_f0-12 lipoproteins and what part comes from the Standard S_f12-400 lipoproteins. Since it has become quite evident that the factors of metabolism responsible for elevation in the two classes are generally *not* the same, the probable therapeutic approach to an individual patient will be quite different, depending upon what lipoproteins the atherogenicity stems from predominantly.

One agent, heparin, is already known which preferentially affects the Standard S_f12-400 lipoproteins much more than the Standard S_f0-12. Another agent, thyroid extract, will preferentially affect the Standard S_f0-12. No doubt further examples of such dissociation will occur and will make it imperative to know which lipoproteins account primarily for the over-all atherogenicity of a patient, such information not being at all available from the serum cholesterol determination.

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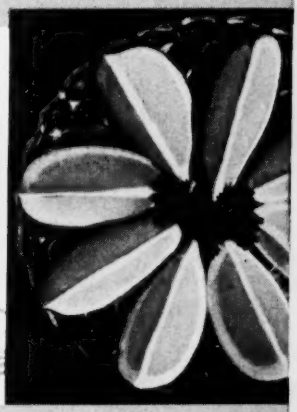
¶ ACKNOWLEDGMENTS—Many of the patients and normal persons involved in the studies herein reported are drawn from a larger group involved in a collaborative long-term follow-up study of the evolution of coronary heart disease. The authors are much indebted to those participating in this study for rendering available patient and normal material. These collaborators include Francis Chamberlain, M.D., Harry N. Akesson, M.D., Thomas P. Lyon, M.D., the staff of the Fort Miley Veterans Hospital, Hyman Engelberg, M.D., Morris Collen, M.D., and the staff of the Permanente Hospital, Oakland, Calif., Thomas Dawber, M.D., of the Framingham Heart Project, David Fassett, M.D., of the Eastman Kodak Corp., Frederick Leeds, M.D., of the Pan American Airlines, A. C. Ladd, M.D., of the United Airlines, and Edward Phillips, M.D., of the Los Angeles Civil Service Commission.

The ultracentrifugal analyses reported represent the combined labors of many individuals in the Donner Laboratory beyond the authors themselves. Fred Stauffer, Frank Glazier, Alex V. Nichols, Mary Spilman, Dolores Piluso, Agnes de la Torre, Margaret Mirk, David Colman, and Ardra Criss have helped materially with the collection of these data.

The authors are indebted to Dr. C. L. Chang, Dr. A. Gittlesohn, and Prof. J. Yerushalmy of the School of Public Health, University of California, Berkeley, for helpful discussions concerning the statistical method which forms the basis of the calculation of the atherogenic index.

Fresh Lemon Juice for Flavoring



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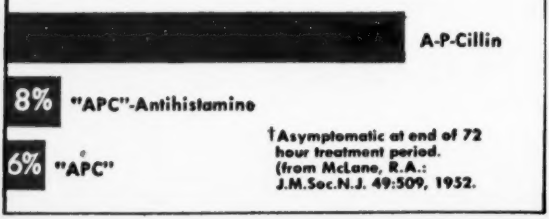

†Asymptomatic at end of 72 hour treatment period. (from McLane, R.A.: J.M.Soc.N.J. 49:509, 1952.

*The results obtained with A-P-Cillin are especially significant when the severity of the disease in each series of cases is considered. All severe cases† treated with APC or APC-antihistamine were "failures," while 56% of the severe cases treated with A-P-Cillin experienced "complete cures."

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* 97.5% of cases completely asymptomatic or improved within 7 hours. McLane, R. A.: Clinical Evaluation of Combined Drug Therap in Acute Upper Respiratory Infections, J. M. Soc. N. J. 49:509, 195

Medical Forum

Discussion of articles published in MODERN MEDICINE *is always welcome. Address all communications to The Editors of* MODERN MEDICINE, *84 South 10th St., Minneapolis 3, Minn.*

The Physician and the Cross-Eyed Child*

QUESTION: When should strabismus in children be corrected?

Comment invited from
Rudolf Aebli, M.D.
Lewis V. Kogut, M.D.
Albert N. Lemoine, Jr., M.D.
Arthur Jampolsky, M.D.
George P. Guibor, M.D.
M. I. Steckler, M.D.
Emanuel Krimsky, M.D.

► TO THE EDITORS: The article by Dr. Richard G. Scobee on cross-eyed children is timely, practical, and contains a great deal of valuable information. However, I cannot agree with the blanket statement that strabismus should be remedied by operation when the baby is 1 year old. At best, operation is a plastic procedure and perfect horizontal or vertical alignment of the visual axis is difficult and almost impossible at this age, especially since the eyes do not approximate their full size until the second year.

Congenital strabismus is usually present at birth, or manifests during the first three to six months. The condition is caused by structural defects in the muscles or by abnormal fascial envelopes or fascial bands; some cases are caused by abnormal neurologic development. In many patients one cannot obtain stereoscopic vision and must be content with a better cosmetic appearance. I agree with Dr. Scobee's statement that the child's personality may be injured if the defect is not corrected before school age. In general, operation should be performed about the third year.

Acquired strabismus usually is evident between the first and second year, and at first is intermittent, later becoming more or less constant. These cases are the more favorable and are generally of the accommodative type. Early and careful refraction under atropine is essential. The constant wearing of the full hypermetropic and astigmatic error, and in selected cases the use of bifocal lenses, will correct the condition in most instances. This group of patients responds well to orthoptic training.

RUDOLF AEBLI, M.D.
New York City

► TO THE EDITORS: The current idea of the majority of the public is that nothing can be done for squint until the child is old enough for a subjective examination. Un-

*MODERN MEDICINE, Feb. 1, 1953, p. 121.

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fortunately, some physicians are of the same opinion. This belief should be condemned.

The family physician and the pediatrician play a vital role in instructing the parent and in guiding the cross-eyed child. It must be realized that if a case is neglected, a functional cure may be impossible and only a cosmetic improvement of the deformity can be expected. The general agreement among those best qualified in this field is that children with squint should have their eyes straightened in early life. This supports Dr. Scobee's statement that the earlier a squint is corrected, the better the chance for normal development.

The amount of vision lost because of cross-eye is in direct ratio to the duration of the squint. A majority of these patients are seen by ophthalmologists after the age of 5, when binocular vision has already developed. This makes the prognosis for functional vision less favorable. It is of the utmost importance to start treatment before fusion. If the eyes can be straightened before the process occurs, they will work together and binocular vision is maintained.

The successful management of strabismus depends on a clear understanding of the physiology of ocular motility, pathologic variations, and an early accurate diagnosis. This necessitates an early review by the ophthalmologist who is qualified to assume the responsibility for the future course of vision.

LEWIS V. KOGUT, M.D.
Cleveland

► TO THE EDITORS: It is my feeling that treatment of strabismus in children should be started as soon as the condition appears. Early treatment may consist of occlusion therapy, glasses, or both.

In most instances, I prefer to defer surgery, if needed, until between the third to fifth year. Eye exercises are most satisfactory after the age of 5. Despite this, early treatment to avoid amblyopia is needed. This may be started from the third to the sixteenth month if the strabismus is present at birth.

ALBERT N. LEMOINE, JR., M.D.
Kansas City, Mo.

► TO THE EDITORS: One would like to be able to make the flatly dogmatic statement that strabismus in children should be corrected the moment it occurs. If the word corrected could be changed to treated, one would have fewer misgivings about such an answer, and fewer qualifications. From the practical viewpoint, the pediatrician or family physician can easily satisfy himself as to the necessity for immediate care of the strabismic child by an easily performed clinical test within the first six months of life.

The important point to establish within the first six months is whether the eyes are constantly crossed or only occasionally so. If definitely established that the child is not using his eyes together for the major part of the time, visual difficulties will become more serious every day the eye is crossed.

The wide nasal bridge in infants frequently misleads the parents or

physician to a diagnosis of strabismus. A simple objectively performed "cover test" with a lighted toy or flashlight easily establishes the diagnosis in most infants. By occluding one and then the other eye of the child with the thumb or the hand, one can readily establish whether the child is using both eyes together in binocular cooperation.

If the strabismus is intermittent or occasional during the first six months of life, but binocular cooperation is established for the major part of the time, one may with reasonable safety delay referral for the first six months. However, any constant strabismus should receive immediate treatment. Mild conservatism must be used with caution in intermittent or occasional strabismus, because of the ever present possibility that intraocular pathology may be the etiologic factor.

Why must a constant strabismus receive immediate treatment? It is because of the bad habits of vision, the anomalous sensory visual development, and the anatomic ocular muscle contractures that ensue every moment the child's eyes are crossed. These may be prevented from developing even if actual correction of the strabismus is delayed.

The ophthalmologist must rule out intraocular pathology, determine the significance of any refractive error, and assure the development of equal normal vision in the two eyes, which is of prime importance if the two eyes are to be used together.

Early treatment consists of correction of any significant refractive error, and alternate occlusion of the eyes, which prevents the bad habits of anomalous binocular cooperation in the strabismic position, maintains visual development in each eye, and prevents anatomic anomalies from becoming progressively worse. At the same time, extreme caution should be exercised in occluding an eye of any child who is using his eyes together in correct binocular cooperation, even part of the time. A permanent strabismus may be precipitated by such a procedure.

The fertile territory for developing good binocular fusion is between the ages of 1 and 6 years. Therefore, the eyes must be used together for as much of this period as possible. Although the potential for normal binocular cooperation is innate, the anomalous sensory habits established in strabismic patients during the period of visual development may be so profound as to be practically irreversible.

Do some children outgrow strabismus? Omitting the wobbly cooperation of infant eyes for the first few months of life, it may be stated that a constant strabismus is only rarely outgrown, and although the eyes become cosmetically satisfactory, one eye remains with poor vision. The armed forces induction statistics reveal an alarming number of young adults with cosmetically straight eyes, but with one eye with extremely poor vision because of an early strabismus. Proper visual care in earliest infancy may rescue such amblyopic eyes,

which occur as the result of a strabismus.

Surgical correction of a strabismus should be done at 1 year of age if the strabismus is of marked degree and the nonanatomic factors are clearly differentiated from the anatomic elements.

If each eye of an infant has clear retinal images (glasses), with a normal innate potential for binocular cooperation (heredity), without bad visual habits too firmly established (sensory), and without anatomic barriers for straight eyes (muscles), it is rare that proper binocular vision and cooperation do not develop.

ARTHUR JAMPOLSKY, M.D.
San Francisco

► TO THE EDITORS: I agree with the assertion that when strabismus is noticed in a child or an infant, the family physician or pediatrician should advise immediate nonsurgical treatment. Frequently, we are told that every infant has heterotropia and will recover spontaneously. Actually, however, when a crossed eye is seen in an infant and is not treated, this deviating eye gradually loses vision and fails to develop. Recovery, therefore, is not complete and sight may be lost.

Opinions vary among ophthalmologists as to the etiology of strabismus. I have studied over 500 patients with cerebral palsy, which usually results from defective development of the brain or from cortical injury. I have found strabismus in over 50% of such patients. This high percentage of crossed eyes with cerebral palsy suggests a derangement of the central nervous system as one cause of strabismus.

In fact, when squint is seen at birth or within the first year, the neurologist and neuro-ophthalmologist consider such squint a result of derangement in the nervous system. Certain children who are farsighted also develop a disturbance in the accommodative convergence mechanism and have crossed eyes when they are 2 or 3 years old. If proper lenses and eye drops are used, 80% of these children will recover without surgery. Is it not wise to defer surgery for several years in such cases?

A second type of strabismus, that resulting from mechanical defects such as shortening of an ocular muscle, is thought common, yet anatomic studies and roentgen examination of the skull reveal few such defects as a primary condition in squint. When a 1-year-old infant who is thought to have such a mechanical or anatomic defect is operated on for squint, the surgeon finds immature ocular muscles, so small that surgical correction is rarely successful with one operation; hence, the operation must be repeated. I am, therefore, in favor of nonsurgical treatment for several years in order to permit development of vision and of the ocular muscles. When the patient is several years of age surgery will be more successful.

The goals for which we strive in overcoming strabismus are normal sight in each eye, normal motor coordination, normal visual coordina-

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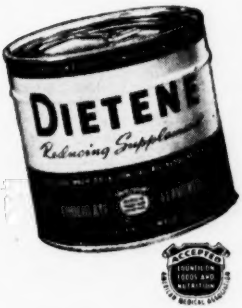

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tion (fusion), and elimination of the crossed eye. Note the order in which these goals are presented. The order can be reversed partially by surgery, but normal vision does not develop until the child is over 2 or 3 years of age. Surgery alone, therefore, when done when the infant is 1 year of age, does not yield the best results in developing vision.

These goals may be achieved by the use of atropine drops in the better eye to compel the crossed eye to focus, by the use of special prism glasses, by covering the better eye, by fusion exercises, and, finally, by surgery. These nonsurgical methods overcome the strabismus in over 50% of children who will recover from the crossed eye without surgery and achieve most of the goals for which we strive—normal vision, good coordination, fusion, and no squint.

For my child, therefore, if he had strabismus, I would employ nonsurgical treatment when the *strabismus is noticed,* surgery when required in six years, but *no* surgery until he had developed excellent vision and some volume of muscular tissue in his ocular muscles. Early treatment, yes. Nonsurgical, yes.

GEORGE P. GUIBOR, M.D.
Chicago

► TO THE EDITORS: Wall eye, crosseye, cockeye, and squint are all synonyms for a very disastrous abnormality that presents serious social problems for the parents, the child, the general doctor, and ophthalmologist.

The *parents* in their anxiety look upon the abnormal cosmetic defect as a personal stigma, and in a very short time obtain a wealth of misinformation. The cosmetic defect concerns them much more than the gaining of normal vision and function in the poor eye. If glasses will help, they are not interested in having the child fitted for glasses.

Regarding surgery, parents often falsely believe that:

1] Surgery is similar to enucleating the involved eye.

2] Operation on the affected eye will destroy vision.

3] The eye must be removed, worked on, then replaced.

4] Even if the eye is straightened it will later deviate in the opposite direction.

The greatest misunderstanding the parents have is that they fail completely to appreciate the child's psychologic problem by thinking that he will outgrow it, making medical attention unnecessary.

The *child* knows that his eyes are not parallel, and that in some way he is different from the other children who taunt him loudly. He hears whispers from adult observers, and eventually develops a deep inferiority complex, a timid backward disposition, and a closed-in personality. Occasionally he will fight back in an effort to draw attention away from the squint, and he becomes unmanageable—a problem child.

The mental torment of these squinting children can be relieved quite simply by the use of glasses or surgery, or both. This should be done as early in life as possible.

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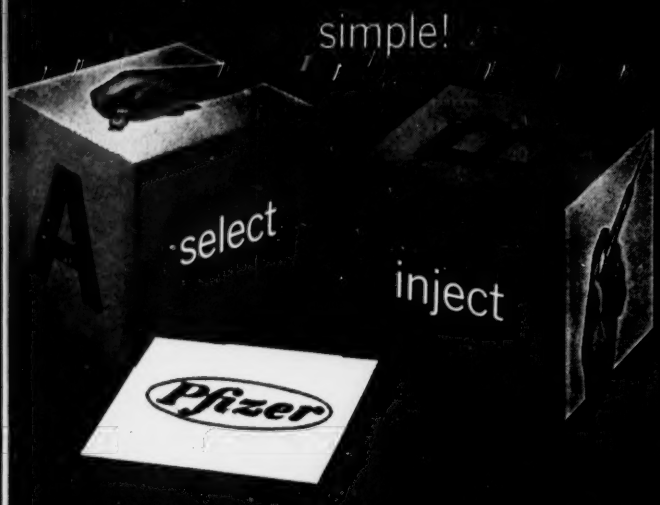

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If a 6-month-old infant has crossed eyes and, after ophthalmologic examination, glasses are indicated for straightening his eyes, he should have them. The "cure" should be directed toward gaining single binocular vision as well as cosmetic perfection.

The *general physician* should appreciate the problem of the parents and the child, and direct them where they will obtain satisfactory medical attention.

The physician should know that:

- Not one spontaneous cure of squint occurs in a hundred cases
- Not all children with strabismus need surgery, but that only an ophthalmologist can tell which patients these are
- No matter what his age, a squinting child should be seen by an ophthalmologist as soon as a deviation is noted, as delay causes loss of vision in the deviating eye
- Surgery, if necessary, is not hazardous to sight or life.

The *ophthalmologist* must ascertain whether the squint is alternating, concomitant, or paralytic. He should also know the visual acuity if possible, the amount of amblyopia present, the amount of deviation of the eye for distance and near, the results of a cycloplegic and also postcycloplegic examination (refraction), the degree of fusion, and whether constant occlusion of the good eye will build up the vision in the poor eye, and so on.

Strabismus should be corrected as early in life as possible, or as soon as noted, but not sooner than age 6 months because then the retina is not fully developed.

M. I. STECKLER, M.D.
Los Angeles

► TO THE EDITORS: Cross-eye is more than a medical or surgical problem. It is to a large extent a psychologic problem and demands a sympathetic understanding of the child's possible inferiority complex. The affected child must be made to feel normal.

Cross-eye is not usually present at birth even though every newborn child fails to coordinate his eyes properly. The tendency to cross-eye, like tuberculosis, may be inherited and occurs in different members of one family.

Not infrequently, the mother consulting the ophthalmologist for the straightening of cross-eye in her child will remark that she believed this defect would be outgrown without treatment or that nothing could be done during the preschool period. Medical experience has shown conclusively, however, that one cannot rely on Nature alone to effect spontaneous straightening of the eyes; often eyes can be straightened and sight preserved if treatment is undertaken at an early age.

Sight in the crossed eye often can be awakened and strengthened through a process of binocular reeducation or training. Though muscles pull the eyes in different directions, cross-eye is not necessarily due to weakness in one or more eye muscles. Rather often it points to some perverted control by the brain and then calls for brain-and-eye coordination training, not for surgery, as many suppose. Therefore, the true aim of binocular training is not to strengthen the eye muscles, but to educate the eyes to

cooperate more intimately with the brain. Through such training, both eyes become alive to each other and learn to focus in unison.

When cross-eye arises from nerve paralysis, binocular training or surgery is often avoided and the cause of the condition, which requires individual treatment, is sought. Cross-eye may arise from the need for eyeglasses. One of the common reasons for cross-eye in the young child is difficulty in focusing the eyes because of the smaller size of the eyeball. Because an increased effort is required to see things, especially close objects, one eye frequently turns inward more than is necessary. Fortunately, improvement of sight by eyeglasses will often concurrently straighten the eyes through relief of eyestrain.

Eye muscle surgery may be safely performed at all ages, provided surgery is really necessary to help sight or to straighten the eyes. Surgery is most successful when the eye turns in, and is less so when the eye turns out. Too much surgery should be avoided at any age even if the cross-eye cannot be completely corrected. Quite often, once the pull on the tense muscle is released, the eyes will further straighten after a few months without any treatment whatsoever. In a number of cases, the eyes straighten, often soon after only one operation. In other cases, the child may require eyeglasses or binocular training even after surgery. When a second operation seems advisable, it is aimed at completing the benefits of the first operation.

While results in the treatment of cross-eye are encouraging, the conservative physician weighs each case individually and open-mindedly considers the relative merits of eyeglasses, operation, and training, alone or in combination. It would be tragic or valueless to prescribe one method of treatment for all cases of cross-eye. Furthermore, one cannot discharge his patient after an operation for cross-eye, but must observe the patient over a period of years to see whether additional treatment is necessary.

EMANUEL KRIMSKY, M.D.
Brooklyn

Medullary Nail for Leg Fractures*

► TO THE EDITORS: Drs. Edwin F. Cave and James E. M. Thomson are to be commended on the clarity of the indications, technic, and postoperative care given in their article on intramedullary nailing. However, the procedure is not intended to be routine and does not replace intelligent management of closed reduction.

The usefulness of intramedullary nailing in patients with fractures through metastases bears emphasis. Union through such a lesion is always problematic and, when fixation and restoration to ambulancy can be attained, is worthy of merit. It may, in some instances, even restore the patient to a measure of usefulness in his occupation.

H. FUNK, M.D.
Winnipeg

*MODERN MEDICINE, June 15, 1952, p. 103.

PEDIATRICS BULLETIN

Prepared In The Interests Of The Profession By The Pediatrics Consultant Staff Of H. J. Heinz Company

Sanitation and Increase of **POLIOMYELITIS**

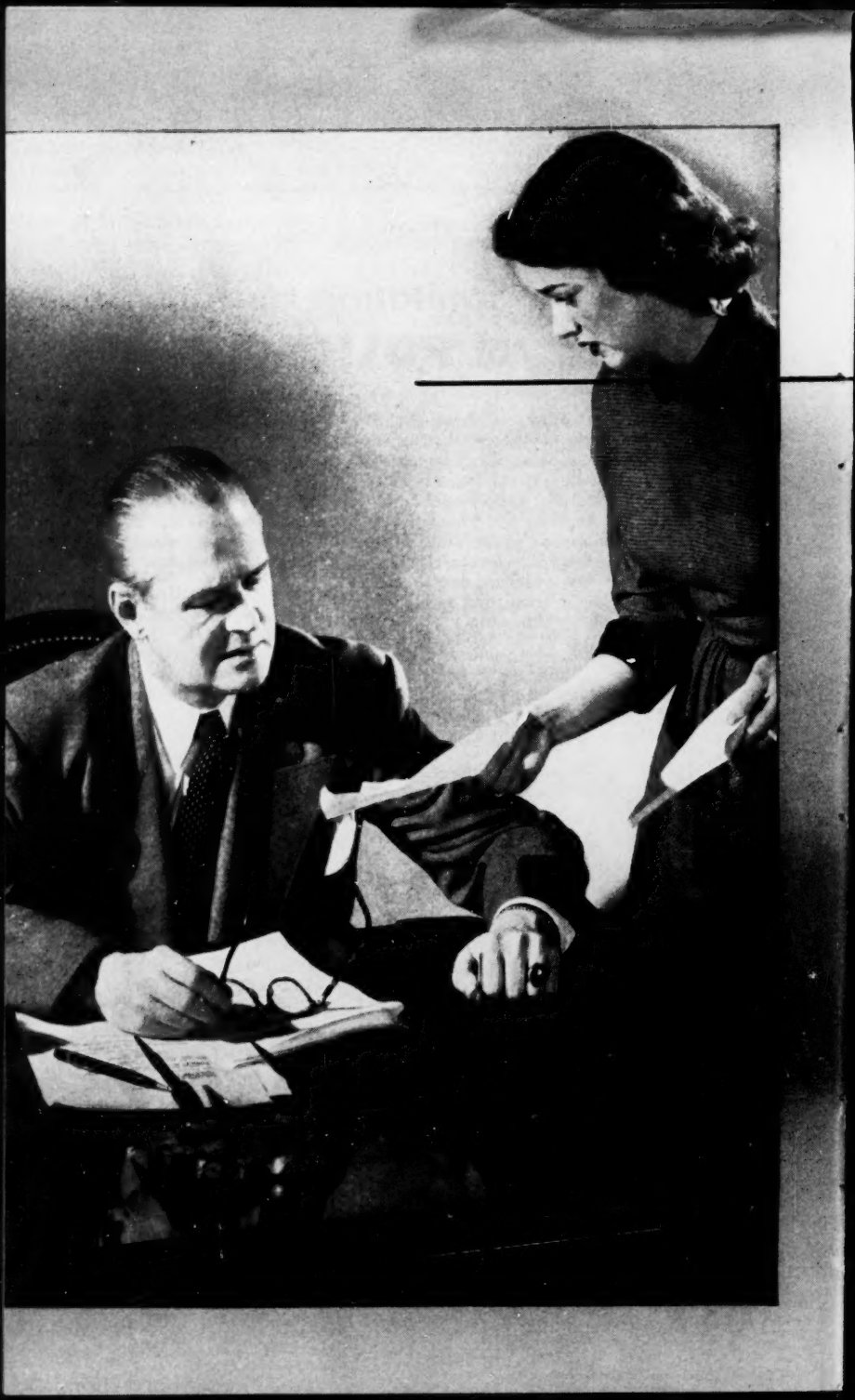
PARADOXICALLY, we have found that there is evidence that better hygiene may bring about increased risk of disease. In this country "Infantile Paralysis" is no longer infantile, but occurs most frequently in older children or young adults. It is clear that there is an inverse relationship between paralytic disease and the finding of circulating antibodies to the poliomyelitis virus.

● **In Egypt,** where poliomyelitis is still an infantile paralysis and few older children contract it, 90% of the children already possess antibodies at the age of three years.

● **In this country** a much lower percent of children or adults have demonstrable antibodies. If we measure prevalence of infection by presence of circulating antibodies, it is evident that subclinical infection in infancy is much more frequent in Egypt than in this country.

● **Here, in the United States,** paralysis seems a less likely consequence of infection by the poliomyelitis virus in infancy than later in life. The failure of our infants to become infected with the virus seems to be related to the increased incidence of poliomyelitis in an older population. It is clear that with this disease, as it is with diphtheria, improved sanitation necessitates a greater dependence on the development and use of artificial immunizing techniques.

NOTE: These bulletins are designed to help disseminate modern pediatrics knowledge to the general medical profession and will appear monthly in Modern Medicine.



Hypertension is a Daytime Disease .....Butisol is a Daytime Sedative

Referring to Butisol in the management of many functional disorders and for the treatment of nervous tension and anxiety associated with such conditions as hypertension, Dripps[1] states: "its greatest usefulness should be in the field of daytime sedation."

Control of the hypertensive patient throughout the day is admittedly difficult, but the type of sedation—"Intermediate Sedation"—provided by Butisol gives the effect you desire.

"Sedation is sustained for approximately five or six hours."[2] Thus, Butisol is suited to the production of a mild and more continuous [illegible]

short-acting barbiturates.

The gentle sedation of Butisol makes it possible to maintain a lowered basal blood pressure, without hindering the patient's normal activities.

Tablets, 15 mg. (¼ gr.), lavender
Tablets, 30 mg. (½ gr.), green
Tablets, 50 mg. (¾ gr.), orange
Tablets, 0.1 Gm. (1½ gr.), pink
Capsules, 0.1 Gm. (1½ gr.), lavender
Elixir Butisol Sodium, 0.2 Gm. (3 gr.) per 30 cc. (1 fl. oz.), green. Samples on request.

McNEIL

LABORATORIES, INC.
PHILADELPHIA 32, PA.

1. Dripps, R.D.: Selective Utilization of Barbiturates, J.A.M.A. *139*:150 (Jan. 15) 1949.
2. Council on Pharmacy & Chemistry: New and Nonofficial Remedies, 1952, Philadelphia, J.B. Lippincott Co., 1952, p. 236.

When to Employ a Low-Salt Diet*

QUESTION: For what conditions is a low-salt diet useful?

Comment invited from
M. Lester Lowry, M.D.
Robert D. Taylor, M.D.
George G. Ornstein, M.D.
A. B. Rimmerman, M.D.
Robert M. Kark, M.D.
John W. Keyes, M.D.
Morley J. Kert, M.D.

► TO THE EDITORS: I am in accord with Dr. Milton W. Anderson's warning against the indiscriminate employment of a highly restricted sodium diet. While the low-sodium diet has often proved dramatically effective in treating congestive heart failure, Ménière's syndrome, certain types of nephrosis, cirrhosis, and disorders of the pituitary-adrenal axis, it is highly desirable to recognize that the low-salt diet affords symptomatic relief rather than physiologic cure.

Questionable benefits may occur with rigid restriction of sodium in hypertension and obesity, but the possibility of secondary acid-base changes as a result of drastic and prolonged sodium depletion must be considered. Overenthusiastic application can be harmful.

Until more is known of the basic physiology of disorders improved by salt reduction, the practitioner should be wary of the extreme restriction of sodium, less than 0.2 gm. a day, over an extended period.

M. LESTER LOWRY, M.D.
Beverly Hills, Calif.

► TO THE EDITORS: Salt restriction is imperative in the proper treatment of congestive cardiac failure. However, since patients with severe valvular disease, but without history of decompensation, have abnormal renal hemodynamic patterns, it is tempting to consider the possibility that moderate salt restriction might postpone decompensation.

Toxemia of pregnancy is another indication for salt restriction, for both clinical toxemia and its experimental counterpart have been favorably influenced by such a program. The edema secondary to postthrombophlebitic states, varicose veins, lymphostasis, and obesity also warrant low-sodium diets.

In the low-sodium diet therapy for hypertension, frequent analyses of the urine sodium excretion are imperative because important errors can be made by even the most conscientious patients when the daily sodium intake is restricted to 0.5 gm., or less.

ROBERT D. TAYLOR, M.D.
Cleveland

► TO THE EDITORS: I agree with Dr. Milton W. Anderson. When no decompensation exists in cardiac disease, a low-sodium diet is unnecessary and should not be used unless decompensation is likely.

Now as to hypertension, I must disagree with Dr. Anderson. Although not visible in essential hypertension, decompensation may be present. The heart is often enlarged and to the left. Fluid may be present in other organs. Unfortunately,

*MODERN MEDICINE, Feb. 1, 1953, p. 82.

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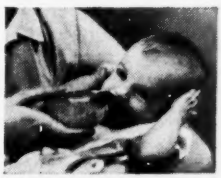

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in this disease, arteriosclerosis is apt to exist and complications may occur in any organ.

Medical understanding of this condition has not been logical. The medical profession has not been able to reduce the blood tension, therefore no treatment is effective. Would not the complications be quite reduced if the arterial tension were low when a vessel ruptures as it so often does in arterio- or atherosclerosis?

Hemorrhage in the eye, brain, lungs, kidney, mucous membrane of the nose, or other organs may occur. We think essential hypertension is associated with hemorrhage in the eye or brain but rarely when it occurs in any other organ. When hypertensives have a low-sodium intake, a visible reduction in size of the heart may be noted in both roentgenogram and electrocardiogram. This could only be a decrease in fluid volume which had not been suspected to be present.

How low a sodium diet should one have? In our patients the best results were obtained below 100 mg. of sodium. The difficulty has been to construct a low-sodium diet that contains 70 gm. of protein. Such a palatable and variable diet is now possible.

No salt-poor diet, whether 0.2, 0.5, 1, or 1.5 gm., is very palatable. Patients seldom lose their yen for salt, the food tastes flat, and the diet is rarely continued for a long period. In extreme low-sodium diets the yen for salt is lost, but when the desire is not lost, salt substitutes may be used. With sugar and spices, foods become tasty; even pancakes with honey, pies, cakes, and cookies may be added and the day's diet will still be below 100 mg. of sodium. When the blood tension has been reduced, the patient's sodium intake may be increased.

A low-sodium intake is not feasible with Mercuhydrin therapy.

GEORGE G. ORNSTEIN, M.D.

New York City

► TO THE EDITORS: I have found the low-salt diet most useful in congestive heart failure and portal hypertension with ascites and nephrosis. Sodium intake should be restricted to 0.2 gm. a day or less for the best results, thereby necessitating fewer mercurial injections. When the restrictions are lifted after compensation has been restored, fluid reaccumulates in a majority of patients.

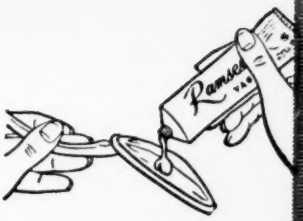
In hypertensive patients, unless sodium intake is severely restricted to 0.2 gm. or less, there have been no results.

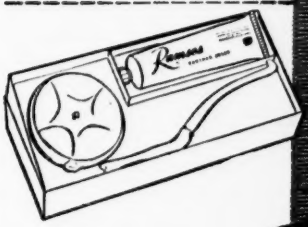
In bronchial asthma and premenstrual tension, I have obtained no definite results.

Electrolyte imbalance, such as a low-sodium state and hypochloremic alkalosis, should be looked for in all patients on such diets, especially when used in conjunction with mercurial diuretics. In a very large series at the Cook County Hospital and the cardiac clinic, these conditions were found in a comparatively few instances.

A. B. RIMMERMAN, M.D.

Chicago





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1. Report to Council on Pharmacy and Chemistry, A.M.A.: J.A.M.A. 148:50 (Jan. 5) 1952.

*Active ingredients, by weight: Dodecaethyleneglycol Monolaurate 5%; Boric Acid 1%; Alcohol 5%

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► TO THE EDITORS: Dietary restriction of sodium is a useful, but potentially dangerous, technic for the management of waterlogging in patients with generalized edema or ascites arising from any cause. Restriction of sodium intake is also of value in preventing the development of edema, which may occur after acute renal shutdown or treatment with hormones.

Although diets low in salt have been used from time to time in treating patients with essential hypertension, Ménière's syndrome, hyperchlorhydria with or without peptic ulceration, and other diseases, I have seen no benefit from such diets in any of these conditions. In fact, their employment as part of a therapeutic regimen in any disease is only justifiable, pathophysiologically, when sodium excretion is perverted.

The edematous states in which we have used sodium restriction with success are commonly the result of cardiac, hepatic, renal, nutritional, or endocrinologic diseases. These include: cardiac failure from any cause; cirrhosis with ascites or edema; acute glomerulonephritis; acute renal failure; the nephrotic syndrome; nutritional edema; preeclampsia and eclampsia; and premenstrual edema. Less common causes of edema in which low-sodium regimens were of value include: beriberi; constrictive pericarditis; Chiari's syndrome; portal vein thrombosis; pressure on the inferior vena cava by tumors and other masses; and menopausal edema.

We use sodium restriction to prevent edema in anuric or oliguric patients, such as may develop during acute tubular necrosis—lower nephron nephrosis—or as a result of renal vascular shutdown—malignant nephrosclerosis, periarteritis nodosa, and other forms of arterial disease. The severely malnourished, cachectic, or anemic patients are sometimes exquisitely sensitive to salt, as we have shown by metabolic studies. In our patients with anorexia nervosa, sodium retention during rapid rehabilitation was associated with an increase in body water and development of edema.

Usually the dangers of edema are not pressing in most malnourished patients. However, if such patients need operations for treatment of ulcerative colitis, malignancy, or regional ileitis, low-sodium regimens should be instituted and sodium-free parenteral fluids should be used pre- and postoperatively. This will prevent both general and local edema which impairs healing in the wound and in bowel anastomoses. The dangers of intravenous salt or salt-containing infusions in malnutrition were strikingly shown in the starved at Dachau and Belsen concentration camps who became edematous and died after blood transfusions (sodium citrate) and after amino acid infusions containing up to 1% salt.

In Cushing's syndrome, excess adrenal cortical hormone causes sodium retention and produces the edema. With long-continued cortisone or ACTH therapy, edema is not as common as in the past when very large amounts of these hor-

(Continued on page 166)

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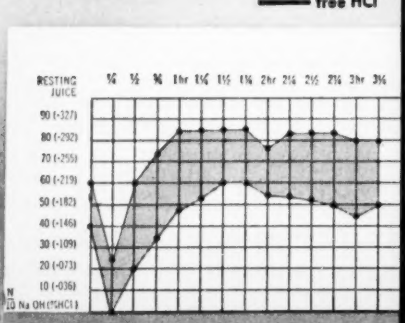
Nulacin

for maintained gastric anacidity

The Key to Successful Peptic Ulcer Therapy

GASTRIC ANALYSIS. Superimposed gruel fractional test-meal curves of five patients with peptic ulcer.



GASTRIC ANALYSIS. Same patients, two days later, showing the profound and sustained neutralizing effect of sucking Nulacin tablets (three an hour).

Continuous and complete acid neutralization, without complicated apparatus and while the patient is ambulant, is the outstanding contribution Nulacin makes in peptic ulcer therapy.

Nulacin represents a new concept in the treatment of ulcer. The Nulacin tablet, conveniently proportioned and of proper hardness, is placed between the cheek and gum and allowed to dissolve. Its antacid ingredients are slowly released and are carried to the stomach. Gastric hydrochloric acid is thus neutralized as it is elaborated, maintaining the pH at approximately 7.0. In this manner, healing is encouraged.

Highly palatable and providing only 11 calories, each Nulacin tablet is prepared from milk combined with dextrins and maltose and incorporates:

Magnesium trisilicate	3.5 gr.
Magnesium oxide	2.0 gr.
Calcium carbonate	2.0 gr.
Magnesium carbonate	0.5 gr.
Ol. menth. pip.	q.s.

In this combination and because of the unique method of administration employed, the efficacy of the antacids in Nulacin is considerably greater than that of a similar quantity taken in the conventional manner.

For the treatment of active ulcer, the patient should be instructed to suck Nulacin tablets, two or three every hour, beginning one-half to one hour after each meal. The efficacy of the tablet is greatly reduced if it is chewed and swallowed.

Nulacin is available in tubes of 25 tablets at all pharmacies.

Horlicks Corporation

Pharmaceutical Division

RACINE, WISCONSIN

1. Douthwaite, A. H., and Shaw, A. B.: The Control of Gastric Acidity, Brit. M. J. 2:180 (July 26) 1952.
2. Douthwaite, A. H.: Medical Treatment of Peptic Ulcer, M. Press 227:195 (Feb. 27) 1952.

mones were used. Consequently, at present, few of these patients require salt restriction. In the treatment of neoplasm with massive doses of androgens or estrogens, edema is not too uncommon and can be controlled with sodium restriction. On occasion we have also seen edema develop with small doses of estrogen used for alleviating symptoms after artificial or natural menopause. Low-sodium regimens are dangerous and should not be used in treatment of myxedema or Sheehan's syndrome.

We divide our low-salt or low-sodium diets into 4 classes:

1] *Simple salt restriction*—No salt in cooking or at table

2] *Low-salt diets*—As in simple salt restriction but, in addition, prohibition of all salted foods and use of salt-free bread and butter

3] *Rigid sodium restriction diets*—As with low-salt diets but employing also special low-sodium foods such as Lonalac, sodium-free canned vegetables and meats, washed cream cheese, and so on

4] *Sodium-free diets*—These consist of emulsions of fats (butter, Wesson oil), carbohydrate (sucrose and glucose), vitamins, and minerals. Sodium-free diets are usually given through a polyethylene tube to anuric or oliguric patients.

All these diets can be modified with regard to protein, carbohydrate, and fat content.

The hazards of sodium restriction are particularly liable to develop in patients who cannot concentrate urine, because sodium is lost at a relatively faster rate than water. Renal function studies should be made on all patients before starting salt or sodium restriction. The low-salt syndrome—weakness, fatigue, lethargy, muscular and abdominal cramps followed by confusion, convulsion, coma, increasing edema, and death—is also prone to develop when sodium restriction is associated with vomiting, diarrhea, Wangensteen drainage, excessive use of mercurial diuretics, employment of ammonium chloride, repeated use of paracenteses, and sojourn in a hot climate.

The biochemical danger signals are usually rising nonprotein nitrogen and a drop in serum sodium and carbon-dioxide combining power. Hypochloremic alkalosis with a drop in serum chloride and a rise in carbon dioxide usually results from movement of sodium into cells and loss of cellular potassium in the urine. Needless to state, blood chemistries should be followed in a serial manner in all patients treated with low-sodium regimens and rigid sodium restriction. Sodium-free regimens should only be used in hospitals.

ROBERT M. KARK, M.D.

Chicago

► TO THE EDITORS: Adherence to the low-salt diet is a hard sentence to impose on any patient. The diet is more correctly termed the low-sodium diet since salt implies only sodium chloride and it is necessary to limit intake of all inorganic sodium compounds. The more severe this restriction is, the harder it is to get the patient to adhere to it, and although 0.5 gm. of sodium is allowed the average cardiac patient with chronic congestive failure, it

the *breads of today* and *yesterday*

A STORY OF PROGRESS IN NATIONAL NUTRITION

Commercial white breads of today offer more, not less, of nutrient essentials than either commercial or homemade breads of former years, even as recently as 1930.

Commercial white breads of today are almost universally enriched with B vitamins and iron, and contain substantial amounts of nonfat milk solids.[1,2] Breads of yesterday contained neither added vitamins and iron nor nonfat milk solids.

Conforming to government requirements,[3] commercial enriched breads of today provide per pound not less than 1.1 mg. of thiamine, 0.7 mg. of riboflavin, 10 mg. of niacin, and 8 mg. of iron. White breads of yesterday contained only insignificant amounts of these important nutrients.

Containing generous amounts of nonfat milk solids,[1] usually 4 pounds per 100 pounds of flour, commercial breads of today provide flour protein supplemented with milk protein. Hence the protein of today's commercial white breads is notably superior biologically to the protein of yesterday's breads,[4] being in itself biologically effective, thus contributing to maintenance of body tissue and growth promotion.

Due to the calcium contained in nonfat milk solids and in other ingredients of the baking formula, commercial white breads of today supply also significant amounts of calcium—about 400 mg. per pound.[5] Breads of yesterday, without these elements, furnished little of this nutritional essential.

Because of this notably high content of essential nutrients, bread —in generous amounts—deserves inclusion in every meal.

---

1. Flour and Bread Enrichment, 1949-50: Prepared by The Committee on Cereals, Food and Nutrition Board, National Research Council, Washington, D. C., 1950.
2. Geddes, W. F.: Cereal Chemists Guard Nutrition, Agricultural and Food Chemistry *1*:38 (Apr.) 1953.
3. Bakery Products; Definitions and Standards of Identity, Federal Register *17*:4453 (May 15) 1952.
4. Sherman, H. C.: Chemistry of Food and Nutrition, ed. 8, New York, the Macmillan Company, 1952, p. 599.
5. Goddard, V. R., and Marshall, M.W.: The Calcium Content of Commercial White Bread, United States Department of Agriculture, Technical Bull. No. 1055, 1952.

   Crespo, S., and Bradley, W. B.: Calcium and Milk Content of Commercial White Bread. Report by the Laboratories of the American Institute of Baking, Feb. 28, 1950.

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is still a monotonous and depressing fare.

Extreme sodium restriction, 0.2 gm., has been utilized by our group for the extremely "waterlogged" cardiac patient and the decompensated cirrhotic patient and for severe stages of the nephrotic syndrome. In the usual case of cardiac failure, the 0.5-gm. sodium diet is satisfactory. The patient with severe hypertension may be placed on this diet program if he has no complicating renal problem (salt-losing state), since some of these patients do exceedingly well on the diet. However, in our experience, the majority receive no objective improvement from this restriction.

In the acute or chronic state of glomerulonephritis with edema, sodium restriction will be useful in preventing increased sodium retention and fluid.

We have prescribed low-sodium diets for patients receiving cortisone or ACTH for long periods, for example, in cases of rheumatic fever and sarcoidosis, in which the excessive sodium retention caused by administration of the adrenal hormone has brought about fluid accumulation. For short periods of dosage this is unnecessary.

In carcinoma of the prostate it has been noted occasionally that retention of water occurs when stilbestrol is being given in large amounts for protracted periods. If the drug must be continued in far-advanced disease with bone metastases, sodium restriction becomes necessary.

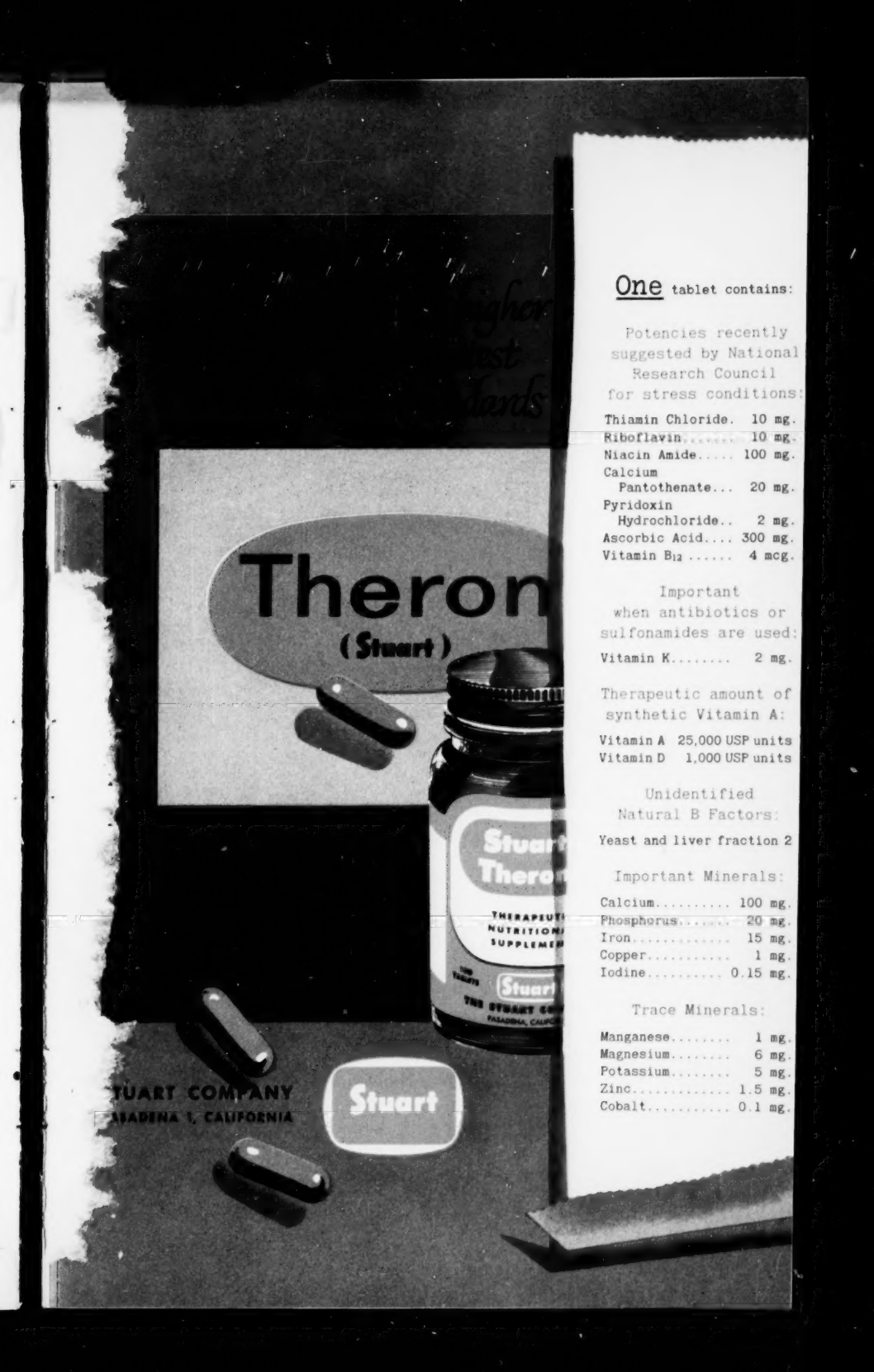
In certain cases of edema in which direct evidence of heart failure is lacking and no specific etiology can be immediately determined, a trial of sodium restriction can be utilized to determine its effect upon the edema if no other contraindications exist.

It is just as important to know when a patient may be taken off salt restriction, or when its use is contraindicated, as to know when to use it. If congestive failure has cleared and the patient has done well, the sodium intake can sometimes be gradually increased to 4 gm. or even to normal and not cause any problem. When severe renal disease exists, one must be sure that the restriction of sodium will not cause severe difficulties, as it may rarely in the "salt-losing nephritis syndrome."

Severe sodium depletion by excessive use of diuretics must be quickly recognized and salt intake increased to prevent serious electrolyte disturbance. Sodium restriction is not useful in any form of heart disease not complicated by cardiac insufficiency, except perhaps in the hypertensive, and one should allow his patients as much as they can tolerate. A depressed undernourished patient is no asset to any physician's reputation.

JOHN W. KEYES, M.D.
Detroit

► TO THE EDITORS: I believe everyone is now agreed that whatever benefit can be derived from sodium restriction in hypertension is obtained if the diet also contains adequate protein, calories, and fat. The big advantage of the rice diet, how-



One tablet contains:

Potencies recently suggested by National Research Council for stress conditions:

Thiamin Chloride	10 mg.
Riboflavin	10 mg.
Niacin Amide	100 mg.
Calcium Pantothenate	20 mg.
Pyridoxin Hydrochloride	2 mg.
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Vitamin B_{12}	4 mcg.

Important when antibiotics or sulfonamides are used:

Vitamin K	2 mg.

Therapeutic amount of synthetic Vitamin A:

Vitamin A	25,000 USP units
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Important Minerals:

Calcium	100 mg.
Phosphorus	20 mg.
Iron	15 mg.
Copper	1 mg.
Iodine	0.15 mg.

Trace Minerals:

Manganese	1 mg.
Magnesium	6 mg.
Potassium	5 mg.
Zinc	1.5 mg.
Cobalt	0.1 mg.

NEW SPECIALLY CONSTRUCTED TABLET
RELEASES HYDROCHLORIC ACID
GRADUALLY INTO STOMACH AT A RATE
MORE CLOSELY PARALLELING NORMAL.

BETTER TOLERATED – MORE EFFECTIVE.

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ADVANTAGES:

1. Specially constructed tablet releases hydrochloric acid in the stomach at a more normal rate. Eliminates disadvantages of the sudden release of HCl.
2. Permits larger dosage in one tablet; each tablet provides equivalent of 15 minims dilute HCl acid.
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EACH TABLET CONTAINS:

440 mg. Betaine Hydrochloride
32.4 mg. Pepsin
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ever, is that it assures sodium restriction, whereas varied diets allow great opportunity for the ingestion of extra salt. On numerous occasions I have tested the urine sodium content of a patient who is supposedly on a 200-mg. sodium diet and found that he is ingesting from 1 to 5 gm. of salt daily.

We feel that the sodium content of the diet should be restricted to 200 mg. or less, although as stated above, the diets are adequate in all other respects and may contain as much as 3,500 calories depending on the individual's physical activities. From time to time the urine must be tested for chloride, or preferably sodium, to verify that the patient is actually following the diet.

During the past five years we have treated about 150 well-established hypertensive patients with such a diet. These patients are ambulatory and are seen at the hypertension clinic of the Veterans Administration Center in West Los Angeles.

Not more than one-third of the patients were found to be following the diet strictly. Of this one-third, between 80 and 90% obtained good symptomatic response, particularly from headache. Five patients had regression of grade IV eyegrounds to grade II. Significant blood pressure response occurred in about 20% of the patients who followed the diet. Some have been on the diet as long as five years without any discernible ill effects.

Some of these latter patients have markedly diminished renal function and have shown no evidence of the low-salt syndrome. In our experience, a low-salt syndrome is relatively rare, and the very fact that renal impairment is present does not contraindicate such a diet. Such patients must be observed carefully with frequent checks of blood electrolytes.

In private practice the patients have been more cooperative; 75% follow the diet well. In a series of about 50 patients, 90% have had good symptomatic response and 50% have had a significant drop in blood pressure. I believe the difference in the two groups (clinic and private) is simply a matter of stricter adherence to the diet by the private patients.

Many people now feel that a 200-mg. sodium diet is a good starting point for the treatment of hypertension. If, by itself, it is not effective, other measures can be added, such as sympatholytic drugs, veratrum, or sympathectomy. Many recent reports indicate that the combination of these other measures with salt restriction is more effective than these measures alone.

The present status of the treatment of hypertension is obviously unsatisfactory and we are still in the stage where clinical trial is warranted. Granting this, drastic salt restriction, because it is relatively harmless, ranks first as a trial procedure in the treatment of hypertension. If ineffective in itself, it should be maintained while additional measures are tried before being discarded.

MORLEY J. KERT, M.D.
Los Angeles

Diagnostix

Here are diagnostic challenges presented as they confront the consultant from the first clue to the pathologic report. Diagnosis from the Clue requires unusual acumen and luck; from Part II, perspicacity; from Part III, discernment.

Case MM-241

THE CLUE

ATTENDING M.D: The next patient is a 4-year-old boy who has been cyanotic since birth. The mother was told that the child has a congenital heart lesion and his activities have been restricted on the doctor's advice.

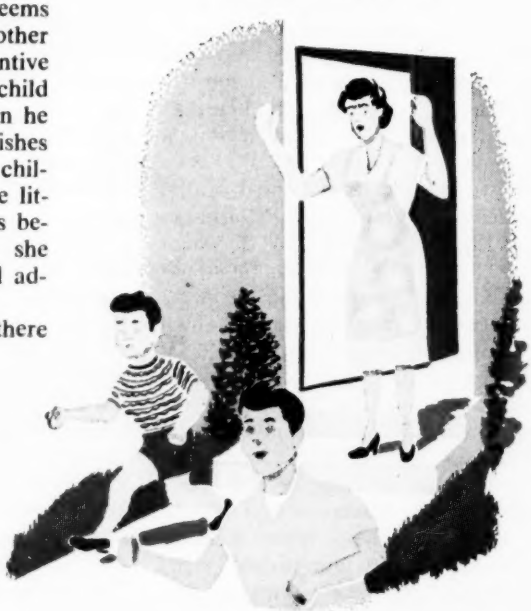
VISITING M.D: Do you imply that the boy's exercise tolerance is not limited by symptoms?

ATTENDING M.D: That seems to be the case. The mother naturally is very attentive and watches over the child quite closely. Yet when he does disregard her wishes and runs with other children he seems to have little or no trouble. It is because of this that she sought further medical advice.

VISITING M.D: Of course there are not really many causes for persistent cyanosis from birth other than congenital heart disease. However, if this little fellow is truly able to keep up with other children in running and playing, I agree that a congenital heart lesion is doubtful. While some children with, say a tetralogy, do surprisingly well, few if any have completely normal exercise tolerance.

ATTENDING M.D: Well, I am certainly perplexed. I'll tell you that I found the heart and lungs entirely normal by physical and fluoroscopic examination.

(Continued on page 174)



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THREE IBEROL TABLETS,
the daily therapeutic dose, supply:

→ Ferrous Sulfate (representing 210 mg. elemental iron, the active ingredient for the increase of hemoglobin in the treatment of iron-deficiency anemia)	1.05 Gm.
Plus these nutritional constituents:	
Thiamine Mononitrate (6 times MDR*)	6 mg.
Riboflavin (3 times MDR*)	6 mg.
Nicotinamide (2 times RDA†)	30 mg.
Ascorbic Acid (5 times MDR*)	150 mg.
Pyridoxine Hydrochloride	3 mg.
Pantothenic Acid	6 mg.
→ Vitamin B_{12}	30 mcg.
Folic Acid	3.6 mg.
Stomach-Liver Digest	1.5 Gm.

*MDR—Minimum Daily Requirement
†RDA —Recommended Daily Dietary Allowance

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(Iron, B_{12}, Folic Acid, Stomach-Liver Digest, with other Vitamins, Abbott)

1-120

in ARTHRITIS and

Like other potent therapeutic agents, BUTAZOLIDIN may sometimes produce undesirable side actions. To achieve optimal results with minimal risk of toxicity certain simple precautions are recommended:

Careful Selection of Patients excluding the senile and those with a history of peptic ulcer, drug allergy or cardiac disease.

Moderate Dosage individualized for each patient at the lowest level required to produce and maintain therapeutic benefit.

Regular Observation of Patients including careful clinical examination and periodic blood counts.

For detailed information physicians are urged to send for the brochure "Essential Clinical Data on BUTAZOLIDIN."

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effective and potent therapeutic agen

Experience in several hundred thousand cases has now completely confirmed the therapeutic potency of the new antiarthritic agent, BUTAZOLIDIN. This entirely new synthetic, unrelated to the steroid hormones, affords these distinctive advantages:

- ***Broad Spectrum of Action*** including virtually all forms of arthritis and many other painful musculoskeletal disorders.
- ***Great Therapeutic Effectiveness*** manifested by relief of pain and functional improvement in the majority of cases.
- ***No Development of Tolerance*** leading to escape from control.
- ***Simple Oral Administration.***

Indications include gout, spondylitis, rheumatoid arthritis, osteoarthritis, and psoriatic arthritis as well as fibrositis, bursitis, and other periarticular disorders.

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Tablets of 100 and 200 mg.

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Division of Geigy Company, Inc.
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PART II

VISITING M.D: Hmm! Well, let's hear the rest of the history.

ATTENDING M.D: There's very little else to tell, really. The boy seems to be normally developed for his age and has no dyspnea, orthopnea, or edema. He does seem to sleep more than ordinary—still takes two naps a day without objection. Also, he occasionally complains of headache and has dizzy spells once in a while, but he has never passed out or had convulsions. The mother attributed these effects to his heart trouble.

VISITING M.D: Family history?

ATTENDING M.D: One aunt also was cyanotic throughout her lifetime and the family always considered her a "heart" patient. However, she apparently lived quite comfortably until death from an automobile accident at the age of 30. Autopsy was refused.

VISITING M.D: She may or may not have had heart disease, but from what you have told me I'm almost certain our patient doesn't. Let's examine him. *(They enter room where the patient is sitting up in bed playing.)*

ATTENDING M.D: *(Later in the corridor)* Well, now what do you think?

PART III

VISITING M.D: I should like to see a sample of the boy's blood. Please ask the intern to bring us a few cubic centimeters in an oxalated tube. As to physical findings, cyanosis is certainly definite, but did you notice the complete absence of clubbing? The head and neck are normal and the lungs clear. The heart is not enlarged to percussion; rhythm is regular at 80 beats per minute.

ATTENDING M.D: Any murmurs?

VISITING M.D: Perhaps a grade I systolic murmur at the apex and over the pulmonary area, but that can be discounted. No thrills. Heart tones otherwise are normal. The remainder of my examination was negative.

ATTENDING M.D: Here are the laboratory reports.

VISITING M.D: *(Glancing through chart)* Hemoglobin 17 gm., red count 6.3 million, leukocyte and differential count normal. Results of serologic studies negative. Reticulocyte count 1.7, urine urobilinogen 2 mg. per day, and serum bilirubin normal. Urinalysis negative. Electrocardiogram normal with a tendency to right axis deviation.

ATTENDING M.D: The fluoroscopy report is entirely negative. *(Intern walks in with a blood specimen from patient.)*

VISITING M.D: Ah, as I suspected. Note the chocolate brown color. Let's shake the tube with the top open.

ATTENDING M.D: It stays dark. I thought the color would improve with aeration. This must not be just reduced hemoglobin.

VISITING M.D: Right. Now let's centrifuge the sample to make sure the color is in the erythrocytes, not the plasma. *(After the centrifugation, the plasma is*

(Continued on page 178)

Some Doctors want fine steel examining room equipment. They pick Hamilton, and are always pleased.

Some want the warmth of rich selected woods — and they discover Hamilton wooden furniture is matchless.

Those who want contemporary colors find that Hamilton has the answer . . . those who want traditional finishes know there are none better than Hamilton.

The Doctor determined to invest generously in his examining room appointments secures the full value he seeks in Hamilton equipment. The young practitioner who must husband his resources discovers a frugal friend in Hamilton.

This wonderfully complete line of examining room equipment gives you so many choices . . . all except one. There is no choice of quality. Every piece of it is Hamilton quality — and there is nothing finer.

Hamilton Manufacturing Company

TWO RIVERS, WISCONSIN

at last...

EFFECTIVE THERAPY for this, *the largest group of hypertensives*

- Rauwiloid offers an effective means of treating mild and moderate hypertension, without subjecting the patient to the hardship and discomfort attending so many other drugs employed for this purpose.
- Produces a calming, tranquilizing effect, without the drowsiness so frequently observed with barbiturates.
- May be given for long periods without loss of therapeutic efficacy; tolerance has not been observed.
- Lowers blood pressure presumably through central action; does not lead to postural hypotension attending the sympathetic blocking agents.
- Relieves associated symptoms; no dosage determination problem.
- Rauwiloid rarely produces side actions, hence patients need be seen only at long intervals. Patients on Rauwiloid are more comfortable, feel better, and are more cooperative.

AN ORIGINAL RIKER RESEARCH PRODUCT
obtained from *Rauwolfia serpentina*

Rauwiloid

for the long-time management of mild or moderate hypertension, with

CONTROL OF ASSOCIATED SYMPTOMS

Rauwiloid represents an alkaloidal fraction obtained from the tropical plant *Rauwolfia serpentina;* it is generically designated the *alseroxylon fraction.*

● Each batch of alkaloidal extract is tested in mammals (dogs) for its effectiveness in producing drop in blood pressure, bradycardia, and sedation.

● Clinically, Rauwiloid produces (1) moderate drop in blood pressure, (2) desirable mild bradycardia, (3) an appreciated calming influence, and (4) prompt relief of headache, dizziness, and other symptoms.

● The hypotensive action of Rauwiloid is slow in developing, and may not attain its maximum effect for weeks or even months. However, the ability to lower blood pressure is limited, regardless of dose.

● Rauwiloid is not ganglionic or adrenergic blocking and does not interfere with postural reflexes. Even at several times the therapeutic dosage, undesirable side actions are rarely seen with Rauwiloid.

● Initial dose 4 mg. (2 tablets) once daily, until desired effect is achieved; thereafter, 2 mg. daily. Available in bottles of 60 tablets, 2 mg. each.

THE ADVANTAGES CARRY OVER IN THE TREATMENT OF SEVERE HYPERTENSION WITH

Rauwiloid + Veriloid®

● The characteristic effect of Rauwiloid is retained when a more potent hypotensive agent such as Veriloid is concurrently given. Clinical evidence suggests that synergistic potentiation results.

● In severe or resistant hypertension, Rauwiloid + Veriloid provides the more potent hypotensive action needed. The combination produces outstanding objective and subjective improvement.

● The calming influence of Rauwiloid enhances tolerance for Veriloid, making it possible for patients to obtain striking reduction of blood pressure from lower doses of Veriloid.

● The average dose of Rauwiloid + Veriloid is one tablet 3 times daily, ideally after meals, at intervals of not less than 4 hours. Each tablet contains 1 mg. of Rauwiloid and 3 mg. of Veriloid. Available in bottles of 100 tablets.

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RIKER LABORATORIES, INC.

clear and the packed cells still dark brown.)

PART IV

ATTENDING M.D: Methemoglobin. I remember reading that some country children have methemoglobinemia from drinking well water high in nitrates but this boy lives in the city.

VISITING M.D: Yes, and the causes of secondary methemoglobinemia are not very likely, since the cyanosis has been present since birth. Still we must question the mother about such items as wax crayons, Phenacetin, acetanilid, sulfonamides, and dyes.

ATTENDING M.D: That leaves us with congenital methemoglobinemia. The aunt's cyanosis fits in, doesn't it?

VISITING M.D: Yes, and we can confirm the diagnosis spectroscopically. Methemoglobin gives an absorption band at 630 millimicrons which disappears when potassium cyanide is added.

ATTENDING M.D: Let's see, as I remember, treatment is methylene blue.

VISITING M.D: Right. Methylene blue given orally each day in doses of about 200 mg. is effective in keeping the methemoglobin level down. Ascorbic acid in daily amounts of 100 to 500 mg. may also be used. Either of these reducing agents is capable of reverting the ferric ion of methemoglobin to ferrous iron, which is then capable of transporting oxygen. The prognosis is good.

Our Office Nurse

Think of a gag that fits the illustration. For every issue a new gag is published and the author is sent $5. The June 15 winner is

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Arlington, Va.

Mail your caption to

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"A persistent posterior is not 'secretary spread.'"

WHENEVER DIARRHEA

is Encountered

Arobon is widely applicable whenever diarrhea or loose stools must be overcome. Its action is dependable regardless of the underlying cause of the diarrhea.

Prepared from specially processed carob flour, Arobon provides a high natural content of pectin, lignin and hemicellulose. Thus it exerts a combined adsorptive, demulcent, water-binding action which is promptly effective in all age groups—adults, children, infants. In most diarrheas, Arobon suffices as the sole therapy; in the dysenteries and infectious diarrheas, it is a valuable adjuvant.

ESPECIALLY USEFUL IN WARM WEATHER DIARRHEA

The diarrheas so often seen during warm weather respond especially well to Arobon with its demulcent and adsorptive action.

Arobon is easily and quickly prepared for use with milk or water. Although it contains no chocolate, when mixed with milk it makes a tasty mixture having a chocolate-like flavor.

Physicians are invited to write for clinical test samples of Arobon.

Arobon is available in 5 ounce jars through all pharmacies.

THE NESTLÉ COMPANY, INC. WHITE PLAINS, NEW YOR

A NEW CHEMOTHERAPEUTIC MOLECULE TAILORED SPECIFICALLY FOR REFRACTORY URINARY TRACT INFECTIONS

Discovery of the antimicrobial properties of the nitrofurans provided a novel class of chemotherapeutic agents. These compounds possess specific antibacterial activity with low toxicity for human tissues.

The simplicity and flexibility of this nitrofuran nucleus make possible numerous variations of its chemical and therapeutic characteristics; a remedy may be tailored to fit the disease.

Within recent years we have so designed two important antimicrobial nitrofurans for topical use: Furacin brand of nitrofurazone and Furaspor brand of nitrofurfuryl methyl ether.

Now we have succeeded in chemically tailoring a unique molecule, designed specifically for the treatment of bacterial urinary tract infections:

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A unique class of antimicrobials

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Brand of nitrofurantoin:
N-(5-nitro-2-furfurylidene)-1-aminohydantoin.

Products of Eaton Research

for **pyelonephritis**
cystitis
pyelitis

which have proven refractory to other antibacterial agents:

FURADANTIN

provides definite advantages:

clinical effectiveness against most of the bacteria of urinary tract infections, *including many strains of Proteus, Aerobacter and Pseudomonas species*

low blood level–bactericidal urinary concentration

effective in blood, pus and urine–independent of pH

limited development of bacterial resistance

rapid sterilization of the urine

stable

oral administration

low incidence of nausea–*no* diarrhea or abdominal pain–*no* proctitis or pruritus–*no* crystalluria or hematuria

non-irritating–no cytotoxicity–no inhibition of phagocytosis

tailored specifically for urologic use

Scored tablets of 50 & 100 mg.
Now available on prescription
Write for comprehensive literature

EATON LABORATORIES Inc.
NORWICH, NEW YORK

Fractionation of blood donations into serum albumin and gamma globulin will double usefulness of collections.

Red Cross Blood Program

SPECIAL REPORT FROM THE PRESIDENT OF ANRC

THE newest challenge being met by the American National Red Cross blood program is that of supplying enough gamma globulin to meet the summer's minimal needs for poliomyelitis prophylaxis.

E. Ronald Harriman, president of the Red Cross, in a special report to chapter chairmen, emphasizes that the Red Cross will supply the gamma globulin but will not be responsible for the allocation or distribution of the serum. This task will be performed by the Office of Defense Mobilization.

By an agreement with the Armed Services Medical Procurement Agency, double use will be made of blood collected for defense purposes through fractionation into serum albumin, now being increasingly used by the armed forces, and into gamma globulin for prophylaxis against poliomyelitis, measles, and infectious hepatitis. In addition, outdated civilian blood will be processed to furnish another source of immune globulin.

To initiate the program, on February 25, the Red Cross gave 1,715,000 cc. of gamma globulin in 2-cc. vials to ODM. The Red Cross is paying for the testing and packaging of 460,000 gm. of war surplus gamma globulin in dried form furnished by the Navy. This supply will provide 2,000,000 cc. for ODM distribution.

Gamma globulin for use against measles and infectious hepatitis will be allocated to state and territorial health officers by ODM. An additional allocation will be made through the same sources to combat poliomyelitis on an intimate contact basis. An additional quantity of the immune globulin is to be held in reserve for epidemics and emergency situations.

To ensure the most economical and effective employment of available gamma globulin, criteria for distribution will be established either by the National Research Council or by a special panel appointed for the purpose. The goal is for the sera to reach the largest possible number of children exposed to poliomyelitis.

The assumption of allocation and distribution of gamma globulin by the ODM brings to an end the program instituted in 1944 by the Red Cross to provide nation-wide distribution of gamma globulin for prophylaxis of measles and infectious hepatitis. This material was processed from surplus World War II plasma. Since 1944, the Red Cross has furnished, without cost, 4,132,312 doses, 2 cc. each, of gamma globulin to state health departments.

Here is an electrocardiograph built to provide the continuity of service you have a right to expect

While it is important that your ECG be Accepted by the AMA Council on Physical Medicine and Rehabilitation, it is of equal and perhaps greater consequence to you that it also be designed and constructed to *maintain these performance standards in continuous service.*

The VISO-CARDIETTE is designed first of all to *exceed* the Council's requirements concerning the instrument's recording characteristics. And then, the *highest quality* purchasing and production control assures the maintaining of that performance *in each instrument* long after it has left the factory.

For example, all purchased components selected for use in the Viso are of *precision instrument quality,* and all are chosen for their *continuity of service* rather than their initial cost. Also, every component in each assembly and every assembly in each instrument, as well as the completed instrument itself, are all *thoroughly checked to rigid Sanborn specifications* as they move along the production line.

In addition, VISO-CARDIETTE construction is guided by electronic and mechanical experts who know from long experience that electrocardiography demands an instrument of *only* the highest quality performance.

Yes, you can expect Continuity of Service with a VISO-CARDIETTE.

A new booklet, "Check Lists for Buyers of ECG's" offers guidance in evaluating the various instruments available. A copy will be sent simply on your request.

Makers of fine ECG's since 1924

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Meanwhile, whole blood and plasma are still required in large amounts each month in Korea. The need to build up the defense plasma reserve is urgent. The goal of approximately 3,000,000 pt. of blood for defense purposes exceeds by more than 500,000 pt. the amount collected for defense last year.

The Red Cross blood program is now serving some 2,650 civilian, military, and Veterans Administration hospitals throughout the country. In 1,948 of these, all the blood used comes from the Red Cross. A total of 32 Red Cross centers are furnishing 90% or more of the blood for their regions.

The civilian use of Red Cross blood is currently about 140,000 pt. of blood a month. The prospect is that this demand will increase as more applications are found for blood and blood products. Also the turnover of patients in member hospitals is becoming greater, with resultant increased demands for blood.

The newest hematologic product to attract attention is fibrinogen, a blood fraction which aids clotting, particularly in cases of severe internal hemorrhage or postpartum bleeding.

Last year, the Red Cross procured through all facilities an unprecedented 4,186,000 pt. of blood. This may be broken down into 1,717,000 pt. for civilian use and 2,469,000 pt. for the defense program. Almost 443,000 pt. of the defense blood were collected by the cooperating blood banks. Some 10,000 pt. of blood a week are supplied by servicemen in 34 armed forces blood centers located on military posts not served by any other blood-collecting facility.

The goal for the 1952-53 fiscal year is 4,700,000 pt. of blood to meet all requirements, civilian and defense. Of this, nearly 3,000,000 pt. are for defense purposes and 1,700,000 for civilian use. An average of 400,000 pt. each month is needed to meet this demand.

However, accomplishment is not measured merely in pints collected or quotas met. Of immediate significance is the creation of a community-inspired and community-maintained program in which many people can apply talents for service to others. That this is being accomplished is attested by the average of 54,000 volunteers a month now serving in blood programs throughout the country.

Of the total time spent by physicians in procurement operations last year, 22% was volunteer. Also, 21% of the total time spent by nurses represents volunteer time.

The Red Cross now has the following facilities: 46 regional centers, 15 defense centers, 140 mobile units operating out of fixed centers, 5 railroad cars, and 32 community blood banks cooperating in defense collections. A total of 2,300 chapters are participating in regional and defense programs: 1,620 for both civilian and defense purposes, and 680 for defense purposes alone.

This vast program, aided by the American people's continued awareness of responsibility, should enable the Red Cross to attain the goal for the coming year.

Prescribed for Purity

A national survey* among doctors and hospitals reveals these significant facts:

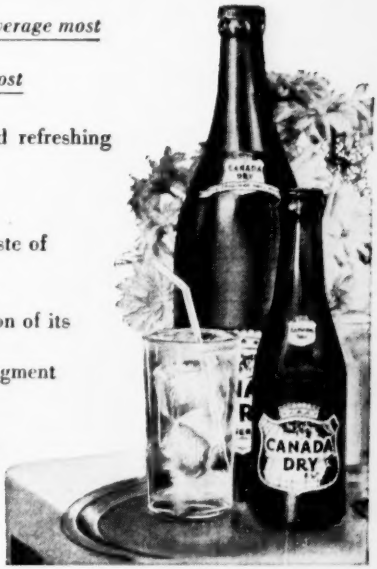
1. *Ginger ale is the type of carbonated beverage most frequently recommended.*
2. *Canada Dry Ginger Ale is the brand most frequently used.*

Patients find Canada Dry a welcome and refreshing beverage.

Doctors recommend Canada Dry

- * to increase fluid intake.
- * to disguise the immediate or after taste of medicines.
- * against certain nauseous conditions.
- * because of the mild carminative action of its pure Jamaica Ginger and CO_2.
- * to speed up pyloric discharge and augment gastric contractions.

**Source on request*



CANADA DRY
GINGER ALE

Some questions about may have occurred

and their answers by

Q: What materials are used in cigarette filters?

A: Until just recently, cellulose, cotton or crepe paper were the only materials used in cigarette filters.

Now, after long search and countless experiments, KENT's "Micronite"* Filter has been developed. It employs the same filtering material used in atomic energy plants to purify the air of minute radio-active particles.

Q: How effective are these cigarette filters?

A: Scientific measurements have proved that cellulose, cotton or crepe paper filters do not take out a really effective amount of nicotine and tars.

However, these same tests also have proved that KENT's exclusive Micronite Filter *approaches 7 times the efficiency of other filters in the removal of tars and nicotine* and is virtually twice as effective as the next most efficient cigarette filter.

Q: Do physiological reactions to filter cigarettes differ?

A: The drop in skin temperature occurring at the finger tip induced by filtered cigarette smoke was measured according to well-established procedures. (a, b)

For conventional filter cigarettes, the drop was over 6

filter cigarettes that to you, Doctor

the makers of Kent

degrees. For KENT's Micronite Filter, there was no appreciable drop.

Q: Does an effective cigarette filter also remove the flavor?

A: KENT's Micronite Filter . . . the first cigarette filter that really works . . . lets smokers enjoy the full pleasure of a really fine cigarette, yet gives them the greatest protection ever from tars and nicotine.

In less than a year's time, the new KENT has become so popular it outsells brands that have been on the market for years.

• • •

Today, KENTs are sold in most major U. S. cities. If your city is not yet among them, simply write to P. Lorillard Co., 119 West 40th St., New York, N. Y., and special arrangements will be made to assure you of a regular supply.

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a. *J.A.M.A.*, Vol. 103, 1934, p. 318
b. *J.A.M.A.*, Vol. 135, 1947, p. 417

*PATENT APPLIED FOR

BASIC SCIENCE *Briefs*

Hematology

Blood Copper in Man

Direct determination of red blood cell copper is more accurate than calculation of whole blood or plasma copper. Confirming observations that concentrations of the metal are greater in women than in men, Dr. M. E. Lahey and associates of the University of Utah, Salt Lake City, find that the average amount per 100 cc. of whole blood is 96 ± 13 μg. for males and 100 ± 11 μg. for females. Diurnal variations in whole blood, plasma, and red blood cell content of the element are slight; changes from day to day, week to week, with meals, or during menstruation are insignificant.

J. Clin. Investigation 32:322-328, 1953.

Metabolism

Fetal Glycogenesis

The placenta regulates blood glucose levels of the human fetus for the first twelve to fifteen weeks of gestation, after which time the fetal liver is able to assume this action. Glucose-6-phosphatase, the enzyme necessary for glucose secretion, develops late in embryonic liver cells, rendering the hepatic tissue incapable of glycogenesis. However, placenta tissue cultures containing C^{14}-labeled glucose and pyruvate show that the placenta of early pregnancy contains this enzyme and is, therefore, able to secrete glucose and maintain proper fetal blood sugar levels. Dr. Claude A. Villee of Harvard University, Boston, finds that as the liver cells gradually attain all the essential enzymes for glycogenesis, the placenta loses the ability to secrete glucose. At birth the placenta appears to be without the phosphatase enzyme and can utilize glucose only for placental tissue and not for the fetal blood stream. The occasional hypoglycemia of newborn infants may be due to retarded development of liver glucose-6-phosphatase.

J. Applied Physiol. 5:437-444, 1953.

Angiology

Mechanics of Vasoconstriction

Contraction of blood vessels in dogs improves efficiency of the elastic reservoir by bringing a greater muscular component into the pressure-volume characteristics. Adrenalin, in spite of pressor effect, increases distensibility of the thoracic aorta over most of the pressure range, from 0 to 200 mm. of mercury. Dr. Robert S. Alexander of Western Reserve University, Cleveland, obtained data from isolated aortic segments and also from the peripheral vascular bed of intestinal loops.

Federation Proc. 12:3-4, 1953.

Be Prepared!

KEEP A VIAL ON HAND FOR EMERGENCIES!

INDICATED:
POSTPARTUM HEMORRHAGE
UTERINE BLEEDING
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ORAL AND NASAL SURGERY
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KOAGAMIN, potent parenteral hemostatic acts fast in minutes. But every second counts in hemorrhage keep it handy!

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KOAGAMIN® STOPS HEMORRHAGE IN MINUTES

Aqueous solution of oxalic and malonic acids for parenteral use

PREOPERATIVELY minimizes oozing
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LATE REPORTS *from Medical Centers*

★ ST. LOUIS UNIVERSITY--Curare-like drugs have been synthesized, though not yet administered to human beings. Dr. Kazuo K. Kimura and associates paralyzed voluntary muscles of animals with phthalimide compounds and restored function with artificial respiration and intravenous neostigmine. However, parasympathetic activity was induced by doses too small to immobilize striated muscle. Salivation, drop in arterial pressure, and augmented voluntary contractions were evoked.

★ UNIVERSITY OF CALIFORNIA, Los Angeles—Chemotherapy of cancer may be improved by a natural pepsin inhibitor isolated from animals as well as human beings. In vitro, the substance acts selectively to prevent respiration of tumor cells. Dr. Philip M. West found that pepsin inhibitors are abnormally low in serum of patients with rapidly progressing cancer and abundant with slowly growing tumor.

★ UNIVERSITY OF UTAH, Salt Lake City--A blood factor that stimulates production of lymphocytes has been isolated, though the chemical make-up is not fully determined. The substance, known as X, counteracts the leukocyte-killing action of the adrenals and produces resistant, so-called stress lymphocytes. Stress cells are perhaps related to leukemic cells, which seem even better able to withstand adrenal hormones. Drs. Thomas F. Dougherty and Jules A. Frank conclude that substance X may be an amine resulting from break-up of ordinary white cells. Since rheumatoid arthritis, tuberculosis, allergies, and other diseases are affected by leukocytes, prognosis may be shown by cell counts and blood reactions to hormones. Blood specimens of 30 tuberculous patients accurately reflected the stage of disease.

★ MEMORIAL CENTER FOR CANCER AND ALLIED DISEASES, New York City--The liver with metastatic cancer can be safely irradiated with large roentgen doses. From 2,000 to 3,750 r can be delivered by equipment having 1,000,000-volt capacity without harming normal hepatic tissue, say Dr. Ralph Phillips and associates. Of 36 patients with tumors that spread from the breast, lung, esophagus, stomach, colon, or rectum to the liver, 28 were relieved of such symptoms as pain, distention, anorexia, nausea and vomiting, weakness, and fever. Improvement lasted two to seven months. Some abnormally large livers were reduced in size after therapy.

★ UNIVERSITY OF CHICAGO—Biologic intelligence, a concept evolved by Ward C. Halstead to measure effects of physical damage to the brain, is determined by results of a battery of tests for brain function. The 4 factors of B.I. are: [A] ability to abstract or classify, essential for good judgment; [B] use of A in solving problems; [C] organized memory; and [D] presentation of A, B, and C to the outer world. Three groups matched in age, I.Q., sex, and education were examined. Some subjects were healthy, others had undergone brain surgery behind the frontal lobes, and the rest had lost right or left frontal lobe in treatment of tumor or epilepsy. The greatest disturbance of B.I. was related to frontal injury.

★ BROOKHAVEN NATIONAL LABORATORY, Upton, N. Y.--Neutrons from a reactor may damage cancer of the brain yet leave healthy tissue virtually intact. Dr. Lee E. Farr and associates temporarily reduced distress in 10 fatal cases. A borax solution containing boron^{10} is injected intravenously, the head is positioned over the radiation port, the reactor is brought to full power in about ten minutes, and neutrons are applied for forty minutes. The boron, which concentrates in tumor tissue within fifteen minutes, captures the neutrons, then gives off alpha particles with some gamma rays and neutrons. Autopsies show considerable destruction of malignant growth.

SHORT REPORTS FROM ABROAD

HUNGARY

Treatment of Polycythemia. Overactivity of the hypophysis is apparently a factor in the pathogenesis of symptomatic polycythemia and erythremia. The pituitary depressant, para-hydroxypropiophenone, produces therapeutic effects on the red cells, hematocrit, and hemoglobin. However, maintenance dosage is necessary to prevent recurrence, report Dr. E. Haynal of the University of Budapest and associates. No hemolysis or toxic action on the bone marrow is noted.

In 4 cases of erythrocytosis and 9 of erythremia the effective dose was 8 to 12 gm. daily, based on the amount of 0.6 gm. per kilogram of body weight. Normal blood values were maintained for 1 patient with 1 gm. daily.

Nausea and vomiting occurring in one instance and toxicoderma in another disappeared when the drug was stopped.

SWEDEN

Electrocardiograms with Poliomyelitis. Acute anterior poliomyelitis quite frequently causes electrocardiographic changes. In 200 consecutive cases of acute poliomyelitis, 975 electrocardiographic tracings were made. Definite alterations were demonstrable in 11.5%, report Drs. E. Bengtsson and T. Johnsson of the Hospital for Infectious Diseases, Stockholm. No patient with a previous history of cardiac or vascular disease was included in the study.

The abnormalities usually appear during the first or second week of the disease and persist from three to four weeks, sometimes even six months to a year. The most typical changes are abnormal T waves, but disturbances in rhythm such as A-V block and auricular flutter and fibrillation also occur.

Electrocardiographic changes are less apt to appear in children than in adults and are most common with bulbar and bulbospinal involvement.

2

Intravenous Iodine in Thyrotoxic Crises. Lugol's solution given intravenously may be most beneficial in thyrotoxic crises. Although the pathogenesis of the condition is not understood, the patient usually has very severe thyrotoxicosis with vomiting, dehydration, pareses, and even coma.

Drs. Karl Eric Grewin, Gösta von Reis, and Hjalmar Wijnbladh of Södersjukhuset and St. Göran's Hospital, Stockholm, describe use of Lugol's solution in 4 cases of acute thyrotoxic crisis. A test dose of 3 cc. of the solution in 300 cc. of 5% glucose and saline is given

Quotane'—potent topical anesthesia without undue isk of sensitization in POISON IVY.

Poison ivy lesion, showing typical "ivy blister" and exudate from broken blister. 'Quotane' Lotion has been applied, and will penetrate through minute orifices in the skin, producing freedom from pain and itching.

Quotane* Ointment
where condition is dry

'Quotane' Lotion
where condition is moist

mith, Kline & French Laboratories, Philadelphia

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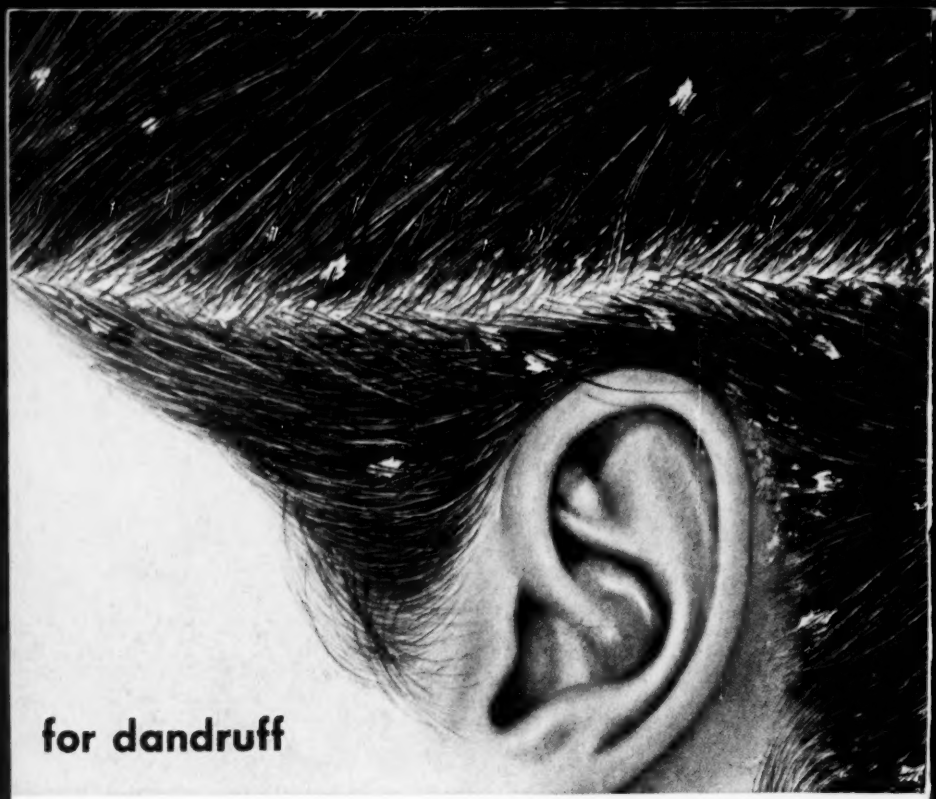
tor dimethisoquin hydrochloride, S.K.F.
(-[β-dimethylaminoethoxy]-
4-n-butylisoquinoline hydrochloride)



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Highly effective in a wide range of common skin disorders

non-toxic—easily applied, easily removed—greaseless

'Pragmatar' brings swift improvement to the crusting and scaling of oily (seborrheic) and dry dandruff. Usually patients need apply 'Pragmatar' no oftener than once weekly at bedtime, rubbing the ointment sparingly, but thoroughly, into the scalp with the finger tips. Because of its smooth oil-in-water base, it is easily spread over the entire scalp.

'Pragmatar' is non-toxic. Elaborate after-rinses are unnecessary since there are no harmful elements to accumulate on the skin. Where desirable, 'Pragmatar' may remain on the scalp as a pleasant dressing.

Available: 'Pragmatar'—the outstanding tar-sulfur-salicylic acid ointment—is packaged in 1½ oz. jars.

Smith, Kline & French Laboratories, Philadelphia

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intravenously. If no untoward reaction occurs, a slow intravenous drip of another 12 to 18 cc., diluted in 1,500 cc. of saline is given. The dose is repeated every twenty-four hours until the critical stage has passed.

If necessary, supplemental sedatives, vitamins, and oxygen are employed, and penicillin to prevent pneumonia. As the patients are often dehydrated, attention should be paid to adequate fluid administration.

AUSTRIA

Carcinoma of the Penis. Radon application appears to be more effective than surgery in treatment for cancer of the penis, notes Dr. N. Nicolov of the Municipal Hospital, Vienna-Lainz. A 10-mm. thick paraffin molding is made of the penis. Radon seeds are fixed on the outside at a site corresponding to the underlying lesion. Radiation should also be insured to the peripheral inflammatory zone.

The irradiation dose is calculated as from 0.5 to 0.8 millicurie per square centimeter. The total dosage of 600 to 800 microcuries is administered over a period of sixty to eighty hours. To avoid necrosis from overdosage, the intensity must be determined in rays per minute with a small ionization chamber. In cases of ulcerated and inflamed phimosis or balanitis, circumcision and treatment of the inflammation are done before radiation is started.

Lymph node metastases, if operable, are treated surgically after irradiation. The regional lymph nodes are irradiated prophylactically, even if not enlarged.

Cures depend on the stage of the lesion, but may occur in 50 to 80% of cases.

2

Diagnostic Value of Pentothal Sleep. Whether a high basal metabolic rate is caused by thyrotoxicosis or by disturbances of the autonomic nervous system can often be determined through comparing the original value with that obtained during Pentothal sleep.

Small amounts of Pentothal or Evipal are used to induce moderate sleep, the dose being carefully adjusted so as not to produce significant respiratory depression. On the basis of basal metabolic rate studies of 100 patients, Dr. Horst Kurt Leonhardt of the State Hospital, Leoben, finds that high values of purely thyroid origin are not influenced by Pentothal sleep. However, metabolic changes related to imbalance of the autonomic nervous system will return to approximately basal levels. When both factors are involved, changes in the basal metabolic rate during the influence of Pentothal will depend on which factor predominates.

3

Pregnancy Test. An office procedure to determine pregnancy by Drs. H. Riess and J. Reitinger of the University of Vienna is essentially a histidine reaction. Tincture of iodine is added to 5 cc. of morning urine to a light brown color. The urine should first be diluted

TASTI-DIET

low calorie DIETETIC FOODS

to ease the psychic problem of weight-reducing diets

TASTI-DIET brand dietetic foods are designed to take much of the hardship out of "dieting." They provide the very foods obese and diabetic persons usually crave most—rich-tasting desserts, puddings, jellies, luscious fruits packed in sweet, syrup-like liquid, tangy, tasty dressings for salads. Through their use the obese patient can "eat his cake and have it too."

These foods, remarkably low in calories, are processed without sugar, using saccharin or sucaryl instead. Nonnutritive texturizing agents give them the "feel" and taste of foods prepared in the usual manner.

LUSCIOUS CHERRIES | DELECTABLE SWEET FIGS | RICH RIPE PEACHES | TEMPTING APRICOTS

By making the prescribed diet so much more palatable, Tasti-Diet brand dietetic foods ease the task of dieting. They cost but little more than ordinary foods. Your patients will appreciate being told about them.

• • •

Tasti-Diet Dietetic Foods are special purpose foods processed to meet specific dietetic needs. Tasti-Diet canned fruits, jellies, and desserts (no sugar added) are sweetened with nonnutritive artificial sweeteners; Tasti-Diet canned vegetables are processed without the addition of salt or sugar; Tasti-Diet dressings, containing no sugar or mineral oil, are prepared especially for low-calorie, low-sugar, and diabetic diets.

FLOTILL PRODUCTS, INCORPORATED

TASTI-DIET DIETETIC FOODS DIVISION

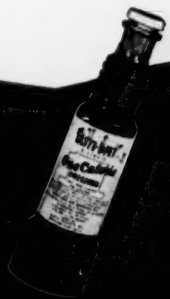
Stockton, California

TASTY JELLIES

Physicians are invited to send for literature and a representative sample of each category of the foods mentioned.

DELICIOUS CUSTARDS

SAVORY GELATIN DESSERTS



TANGY DRESSINGS

slightly if too concentrated. Gentle heating turns the color red if the patient is pregnant. Equivocal reactions are made more definite by adding a few drops of acetic acid. In a series of 2,500 cases, 4% false negatives and 8% false positive reactions occurred. The control series consisted of gynecologic patients; some of the gynecologic conditions were found to be associated with a high percentage of false positives—13% in adnexitides. In a small number of cases the test was sensitive enough to follow the fate of the fetus in threatened abortion.

GERMANY

Iron and Copper in Liver Disease. The metabolism of iron and copper, being regulated by the reticuloendothelial system and mainly by the liver, is affected in most diseases involving the liver and biliary system.

Drs. K. H. Butzengeiger and J. Lange of the University of Bonn stress the importance of serum iron and copper changes in the differential diagnosis of hepatitis, obstructive jaundice, and cirrhosis. A study of 180 cases of hepatobiliary lesions shows that in uncomplicated liver diseases the serum iron level never decreases, but either increases greatly or remains the same. The copper level usually does not change. Thus the iron-copper ratio increases over the normal value.

In obstructive jaundice, whether caused by tumor, stone, or cholangitis, the copper level rises and the iron level remains normal or tends to decrease. This causes a drop in the iron-copper ratio, sometimes to about one-third of the original value.

In cirrhosis and chronic hepatitis, the iron-copper ratio varies with the extent of the disease and is not as indicative as in acute hepatitis and obstructive jaundice.

2

Vitamin B_6 for Motion Sickness. In 90% of cases, seasickness can be relieved by 3 suppositories daily, each containing 50 mg. of vitamin B_6, reports Dr. Leo Benkendorf of Hamburg after studying 2,500 cases in stormy crossings of the North Atlantic. The patients are completely free of side effects and even have increased appetite. The suppositories exert a more constant action than the same dose taken orally.

ENGLAND

Hepatitis of the Newborn. Mortality with hepatitis of the newborn is high and 20% of the survivors have sequelae. Drs. Martin Bodian and G. H. Newns of the Hospital for Sick Children, London, in describing 53 cases of neonatal hepatitis, remark that the disease is often overlooked or misdiagnosed.

The predominant symptom is jaundice, usually appearing at birth or during the first days of life and lasting several weeks to several months or more. Almost all the babies are born at term. The infant does not eat and vomits. The

EVENTUALLY, you may be riding herd on his irregular eating habits and probably, prescribing a potent, B complex supplement like SUR-BEX or SUR-BEX WITH VITAMIN C.

Compressed, easy to swallow, each SUR-BEX tablet provides six important B vitamins, plus liver fraction and brewer's yeast. SUR-BEX WITH C adds five times the minimum daily requirement of ascorbic acid. No trace of liver odor in these triple-coated, vanilla-flavored tablets. Daily prophylactic dose is one tablet. Two or more for severe deficiencies. In bottles of 100, 500 and 1000. Abbott

Each SUR-BEX Tablet contains:

Thiamine Mononitrate	6 mg.
Riboflavin	6 mg.
Nicotinamide	30 mg.
Pyridoxine Hydrochloride	1 mg.
→ Vitamin B_{12} (as vitamin B_{12} concentrate)	2 mcg.
Pantothenic Acid (as calcium pantothenate)	10 mg.
Liver Fraction 2, N.F.	0.3 Gm. (5 grs.)
Brewer's Yeast, Dried	0.15 Gm. (2½ grs.)

Sur-bex with Vitamin C contains 150 mg. of ascorbic acid in addition to the vitamin B complex factors above.

PRESCRIBE

SUR-BEX®

(Abbott's Vitamin B Complex Tablets)

or **SUR-BEX** with **C**

1-175

general condition deteriorates, the abdomen is distended, the liver enlarged and firm, and the spleen often palpable. Some infants have hemorrhagic tendencies with nosebleed and umbilical or intracranial hemorrhage. Even without hemorrhage, severe anemia may exist.

The clinical picture resembles that with obstructive jaundice. Differential diagnosis is difficult because of the unreliability of functional liver tests at early ages. Liver biopsy remains the deciding diagnostic test—showing zonal necrosis with foci of regeneration of large, atypical hepatic cells and intralobular biliary obstruction. Later the biopsy may reveal complete regeneration or fibrosis.

SWITZERLAND

Butazolidine and Renal Function. The pyrazolidine derivatives Irgapyrine and Butazolidine exert a pronounced influence on the electrolyte metabolism of the kidney as well as on glomerular filtration. The administration of these drugs causes retention of sodium, chlorine, and water and decreases glomerular filtration, observe Drs. P. Dupont, A. Duckert-Maulbetsch, and J. Fabre of the University of Geneva. This antidiuretic effect is believed to be of functional nature, through increased tubular absorption. No change in potassium excretion can be noted. Renal lesions are not observed, nor is albuminuria or cylindruria.

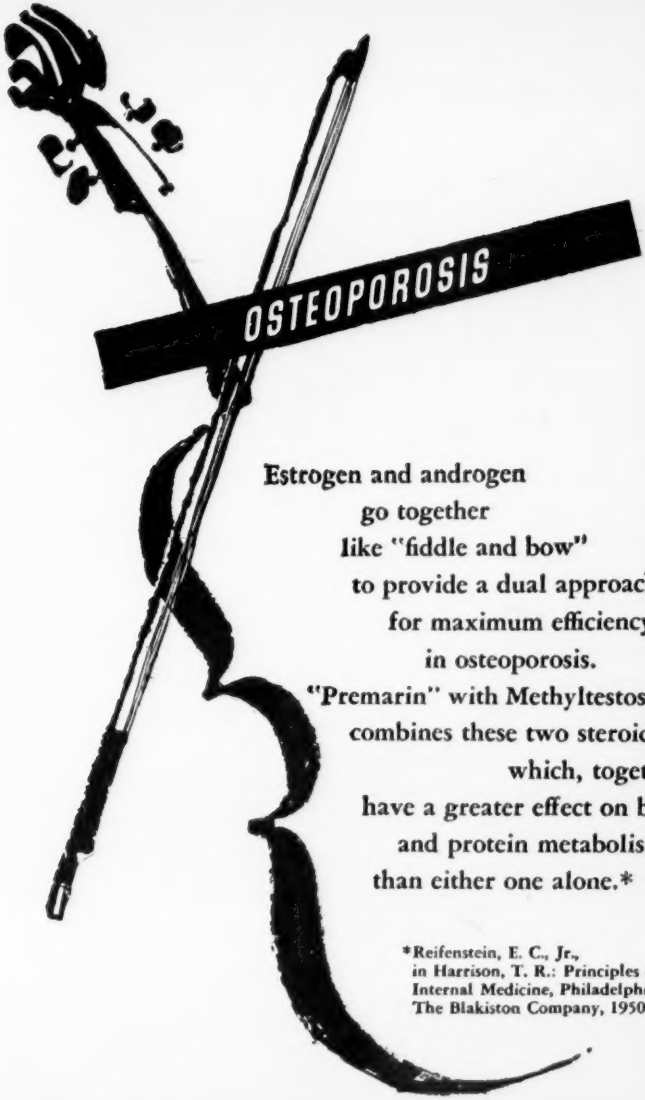
In 21 of 115 cases studied, the pyrazolidine derivatives showed an antagonistic action to mercurial diuretics. Antirheumatic treatment with Butazolidine and Irgapyrine requires careful attention, especially if the patient has a compensated disease of the kidneys, heart, or liver, since excessive water and electrolyte retention may rapidly lead to decompensation.

2

Myocardosis with Diabetes. The dysproteinemia and electrolyte imbalance so frequent in cases of diabetes mellitus will impair the function of the myocardium unless the metabolism is corrected while the condition is reversible. Eventually, irreversible myocardial fibrosis appears.

Dr. P. Tomaschett of the University of Zürich found dysproteinemia, as evidenced by total serum proteins, serum coagulation band, and sedimentation rate, in 63 of 64 diabetic patients under 40 years of age. The degree of dysproteinemia usually paralleled the severity of the disease.

Myocardosis, as diagnosed by physical examination, roentgenograms, and electrocardiograms, was present in 50 cases. The most indicative changes were found in electrocardiograms, were best seen in the chest leads V_1-V_6, and consisted of flattening and prolongation of the T wave, prolonged Q-T interval, and tachycardia. Sinus arrhythmia, extrasystoles, A-V dissociation, and P wave abnormalities were less frequent. Cardiac dilatation and abnormal heart sounds were noticed in cases of advanced and poorly compensated diabetes.



Estrogen and androgen
go together
like "fiddle and bow"
to provide a dual approach
for maximum efficiency
in osteoporosis.
"Premarin" with Methyltestosterone
combines these two steroids
which, together,
have a greater effect on bone
and protein metabolism
than either one alone.*

*Reifenstein, E. C., Jr.,
in Harrison, T. R.: Principles of
Internal Medicine, Philadelphia,
The Blakiston Company, 1950, p. 655.

"PREMARIN" with METHYLTESTOSTERONE

for combined estrogen-androgen therapy

Ayerst, McKenna & Harrison Limited • New York, N. Y. • Montreal, Canada

Pulvules 'Reticulex' provide potent oral therapy for all anemias which will respond to known therapeutic measures.

Each pulvule contains:

Liver-Stomach Concentrate, Lilly	400 mg.
Vitamin B_{12} (Activity Equivalent)	10 mcg.
Ferrous Sulfate, Anhydrous	200 mg.
Ascorbic Acid	50 mg.
Folic Acid	0.33 mg.

For pernicious anemia: Prescribe 2 pulvules three times a day to start; then adjust to maintain a normal blood picture.

For other anemias: 1 or 2 pulvules three times a day.

Lilly

Contains <u>therapeutic</u> quantities of all the known antianemia principles.

PULVULES

Reticulex

(LIVER, B_{12}, IRON, AND VITAMINS, LILLY)

short REPORTS

Radiology

Wound Healing

Rate of healing in surgical wounds is decreased in recently irradiated tissue in rats, but the final wound strength is unaffected. Animals were exposed to irradiation and then subjected to standard abdominal incisions immediately to three months after roentgen exposure. Dr. Walter Lawrence, Jr., and associates of the Memorial Center for Cancer and Allied Diseases, New York City, report that tensile strength of healed wounds was the same regardless of time of surgery as for animals receiving no preoperative irradiation. However, a significant delay in healing was apparent for animals operated upon immediately or one week after radiation.

Surgery 33:376-384, 1953.

Cardiology

Digital Examination of Heart

A specially designed rubber diverticulum, sutured to the myocardium of the right ventricle, enables digital exploration of the heart and the correction of intracardiac defects in dogs. Dr. William W. L. Glenn of Yale University, New Haven, Conn., makes the appendage of liquid latex, using an oval glass mold with 2 extensions. The condom-like product is about 0.015 in. thick, 2½ in. long, and 1¼ in. in diameter. Before suturing, the open end is rolled over once to increase tensile strength of the rubber at the site of connection and thereby decrease blood leakage. A 2-cm. incision in the muscle is made with the knife inserted into the saline-filled artificial attachment. The scalpel is then slowly withdrawn while a clamp is used, preventing loss of blood prior to insertion of the finger. During the operation, a slow heparin drip is maintained by introduction of a catheter into the smaller extension of the rubber. When the operation was performed on 26 dogs, blood loss was small and normal function of the heart was only slightly interrupted.

Yale J. Biol. & Med. 25:233-239, 1953.

Physical Medicine

Body Fat, Sex, and Age

Proportions of body fat increase with age in both men and women, but females have much higher values at all times. Fat content of women 25, 35, 45, and 55 years old average 26.5, 30.5, 34.5, and 38.5%, and of men, 13.1, 17.3, 21.6, and 25.9%. Dr. Josef Brozek and associates of the University of Minnesota, Minneapolis, report that determinations of specific gravity are more accurate than measurement of skin folds in reflecting age and sex differences.

Federation Proc. 12:21-22, 1953.

why hospitals use

CARBONATED BEVERAGES

The "home" patient on a soft diet soon tires of it. To add interest many hospitals use carbonated beverages blended with the usual "tonic" drinks such as plain egg nog, milk, etc.

In a recent "sample" hospital survey these hospitals cited the following reasons for using soft drinks:

271	use carbonated beverages to alleviate post-operative and pregnancy nausea	83.5%
244	use carbonated beverages when no other food can be tolerated .	75.4%
188	use carbonated beverages to insure adequate liquid intake . .	58.3%
185	use carbonated beverages as forced liquids	57.3%
160	use carbonated beverages as a between-meal beverage . . .	49.5%
126	use carbonated beverages to aid digestion	39.0%
56	use carbonated beverages to facilitate administration of milk in febrile cases	17.3%
21	use carbonated beverages to combat food or chemical poisoning .	6.5%

But carbonated beverages help in other ways too! They stimulate the taste buds and enhance appetite. They supply added quick energy because of their sugar content (largely invert). They speed up the emptying time of the stomach because of their CO_2 content. They give the patient a psychological lift.

Bottled carbonated beverages provide a suitable supplement to the basic dietary recommendations of the Food and Nutrition Board of the National Research Council.

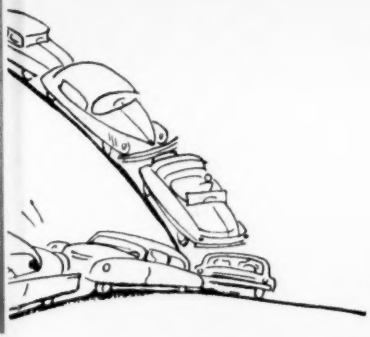
AMERICAN BOTTLERS OF CARBONATED BEVERAGES

THE NATIONAL ASSOCIATION OF THE BOTTLED SOFT DRINK INDUSTRY

American Bottlers of Carbonated Beverages WASHINGTON 6, D. C.

Vi terra Therapeutic

1. Mann, G.V. and Stare, F.J.: Nutritional Needs in Illness and Disease, J.A.M.A., 142:409 (Feb. 11) 1950



some cases need

MORE POWER

When nutritional deficiencies develop, potencies of from 5 to 10 times the daily maintenance requirements of all lacking nutrients must be supplied.[1]

Each VITERRA THERAPEUTIC capsule contains Vitamins, Minerals and Trace Elements in the high dosages necessary for rapid and complete correction of nutritional deficiency states.

EACH CAPSULE CONTAINS

VITAMIN A	25,000 U.S.P. Units	COBALT	0.1 mg.
VITAMIN D	1,000 U.S.P. Units	COPPER	1.0 mg.
VITAMIN B_{12}	5 mcg.	IODINE	0.15 mg.
VITAMIN B_1	10 mg.	IRON	10.0 mg.
VITAMIN B_2	5 mg.	MAGNESIUM	6.0 mg.
NIACINAMIDE	100 mg.	MANGANESE	1.0 mg.
VITAMIN C	150 mg.	MOLYBDENUM	0.2 mg.
CALCIUM	103.0 mg.	PHOSPHORUS	80.0 mg.
		POTASSIUM	5.0 mg.
		ZINC	1.2 mg.

J. B. ROERIG AND COMPANY, CHICAGO 11, ILLINOIS

Toxicology

Antileading Agent

Symptoms of acute lead poisoning may be significantly alleviated within a few hours by administration of calcium ethylenediaminetetraacetate (CaEDTA). In 8 cases of poisoning, lead excretion up to as high as a factor of 20 occurred after use of the drug, report Dr. H. Foremen of Los Alamos, N. M., and associates. No indication of lead mobilization or drug toxicity is reported. Suggested dosage by intravenous drip is 0.5 gm. per 30 lb. of body weight hourly, with total dose limited to 1 gm. for a twenty-four-hour period and a maximum accumulative weekly dose of 5 gm. Courses of ten-day treatments should be followed by a rest period of one week. Low toxicity of the calcium chelate is demonstrated in the complete recovery of the drug in the excreta twenty-five hours after administration, 95 to 99% being in the urine, the rest in the feces.

Arch. Indust. Hyg. 7:148-151, 1953.

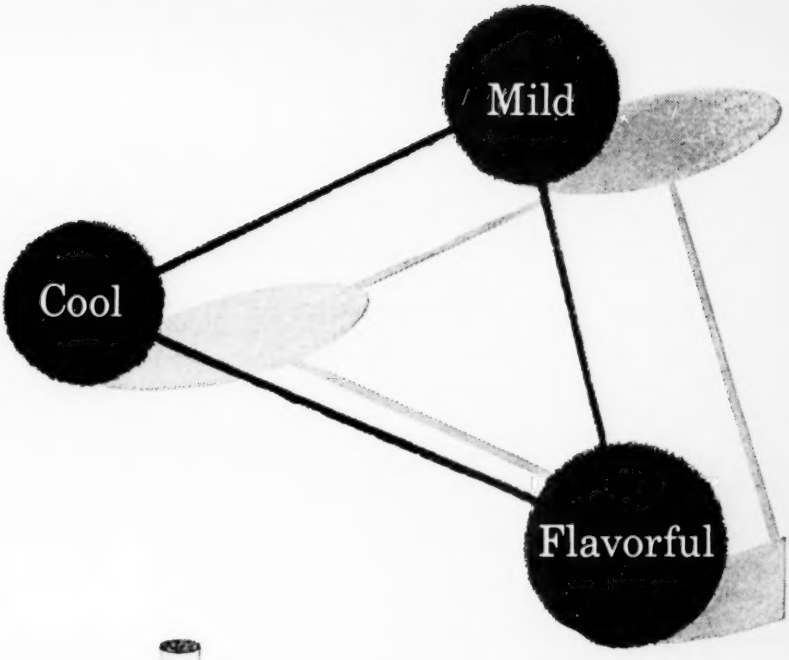
Neurology

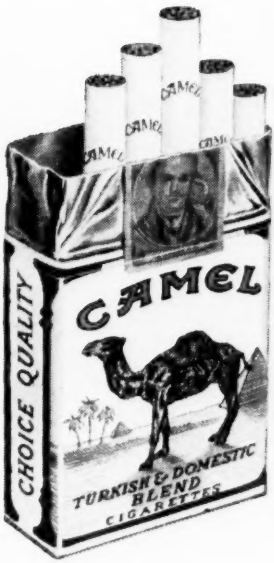
Blood Plasma in Multiple Sclerosis

Cyclic abnormalities in plasma protein patterns of patients with multiple sclerosis can be detected periodically by paper chromatography. Studies of 437 weekly chromatograms from 41 patients indicate that abnormal plasma protein patterns recur in cycles every one to three months and last one to five weeks. However, abnormal patterns may appear more often and for shorter periods, reports Dr. Roy L. Swank of McGill University, Montreal. Abnormal chromatograms were recorded for 12 patients during periods of acute exacerbation or forms of fluctuation of the disease, demonstrating the close relation of cyclic abnormalities to disease activity. Only in 1 instance was disease activity noted when the chromatogram was normal. More often, abnormal chromatograms occurred without the activity of multiple sclerosis. Weekly plasma protein studies of 21 normal subjects also showed cyclic abnormalities of less pronounced variation and shorter duration during common colds or menstruation and in siblings of patients with multiple sclerosis.

Arch. Neurol. & Psychiat. 69:281-292, 1953.

"I'm that large woman you put on a reducing diet six months ago!"





There must be a reason why...

More people smoke

Camels

than any other cigarette!

Radiology

Splenic Antiradiation Factor

The nuclear fraction of splenic homogenate may counteract lethal irradiation. Splenic material from young mice was prepared by Dr. Leonard J. Cole and associates of the U. S. Naval Radiological Defense Laboratory, San Francisco. Homogenates were placed in a modified sucrose medium and fractionated by differential centrifugation. Mice receiving a single injection of the nuclei fraction after roentgen exposure were definitely protected. In 2 experiments, all animals were alive thirty days after irradiation; no untreated mice survived. Mitochondria, microsome, soluble fractions, and crude extract of nuclei were ineffective.

Federation Proc. 12:27, 1953.

Oncology

Cancer from Tobacco

Tar samples obtained from cigarets in a manner simulating human smoking habits are carcinogenic for mice. Dr. Ernest L. Wynder and associates of Washington University, St. Louis, and Memorial Cancer Center, New York City, collected smoke into flasks, condensed the tars, and painted the tar solutions onto the backs of mice. Eight to thirteen months later papillomas had developed in one-half of the animals and, within ten to fifteen months, 1 of every 6 of the mice had carcinomas, some metastatic. Evidence suggests a comparable carcinogenicity of tobacco tars in man.

Proc. Am. A. Cancer Research 1:62-63, 1953.

"I think I'm in love, but I'm going to have my doctor give me a basal metabolism test just to be sure."

allergy

is essentially an AMBULATORY DISEASE

. . . and it's simple to keep your allergic patients ambulatory on Neohetramine therapy.

Neohetramine is noted for prompt symptomatic relief without appreciable interference with daytime alertness.

Neohetramine is virtually free from sedation and toxicity . . . an antihistamine of choice.

Neohetramine is frequently prescribed in cases of hay fever, nonseasonal rhinitis, gastrointestinal allergy, extrinsic asthma, and atopic dermatitis, as well as pruritus ani and vulvae.

Neohetramine for oral administration is available in both tablet and syrup forms . . . for topical application as a soothing cream.

Tablets — 25, 50, and 100 mg. Bottles of 100 and 1,000.
Syrup — 25 mg. per teaspoonful (4 cc.). Bottles of 1 pint.
Cream 2% — in water-miscible base, collapsible tubes of 1 oz.

NEOHETRAMINE® HYDROCHLORIDE

BRAND OF THONZYLAMINE HYDROCHLORIDE

potency without penalty

IN ANTIHISTAMINE THERAPY

Nepera Chemical Co., Inc. • Pharmaceutical Manufacturers • Nepera Park, Yonkers 2, N. Y.

Oncology

Obesity and Cancer

Incidence of mammary cancer is increased in mice injected with gold thioglucose, which promotes food consumption. Use of the drug results in animals almost twice the size of controls, and the appearance of spontaneous mammary tumors is significantly earlier in such obese cases, reports Dr. S. H. Waxler of Stanford University, San Francisco. Injected females that are pair-fed to restrict weight levels have a tumor incidence equal to untreated animals, indicating a relationship between tumor formation and high caloric intake.

Proc. Am. A. Cancer Research 1:58, 1953.

Medical Awards

Student Winners Announced

Winners of the 1952 Schering competition for medical students are Edward Allen Jones of Meharry Medical College, Nashville, Tenn.; Seymour Cohen of the State University of New York, Syracuse; and William Howard Spencer of the University of California, San Francisco. Awards of $500 were given for papers on steroid hormones in geriatrics, topical uses of antihistamines, and eye chemotherapy.

"Testing . . ."

MEDICAL MOMENTS . . . *VACATION?*

"Too bad about that fish, Doc . . . might have run twenty-twenty-six pounds, but to get back to my sister-in-law's stomach trouble . . . after the operation . . ."

You probably have your share of local irritants that you've just got to tolerate. Like chronic complainers, seekers of free advice . . . and frustrated diagnosticians like the one pictured above.

But there are certain other irritations you *don't* have to put up with. One of them is *hospital hands;* hands that get tender and sore from frequent and energetic scrubbings. Not when it's so easy and so pleasant to keep them smooth and comfortable with Noxzema. It's delightfully soothing – helps heal the tiny cracks and cuts in chapped skin. And Noxzema is greaseless, too. No greasy mess on your hands.

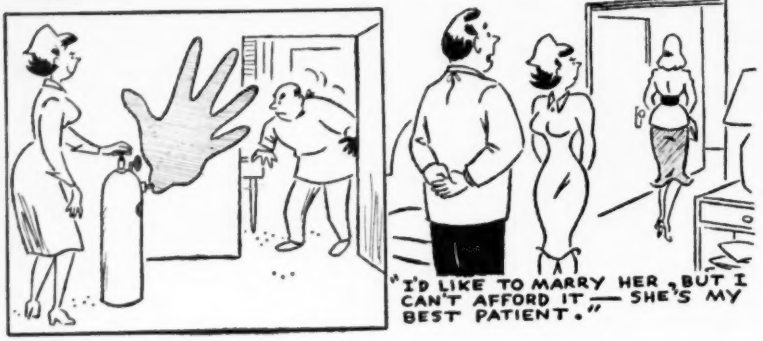
Here's another good tip. Rub a little Noxzema on your feet some night when they're hot and tired after a hard day. See how cool and refreshing it feels, how much better *you* feel afterwards!

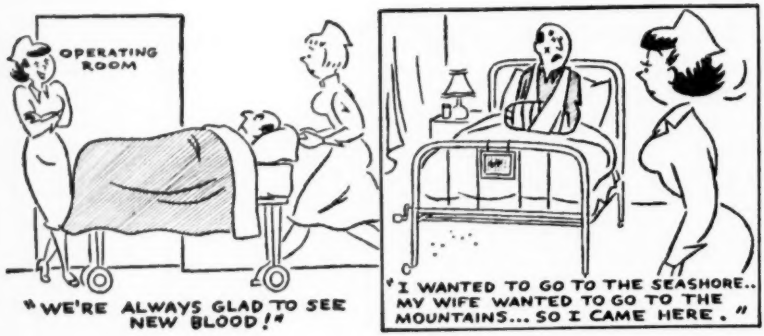
For Your Information

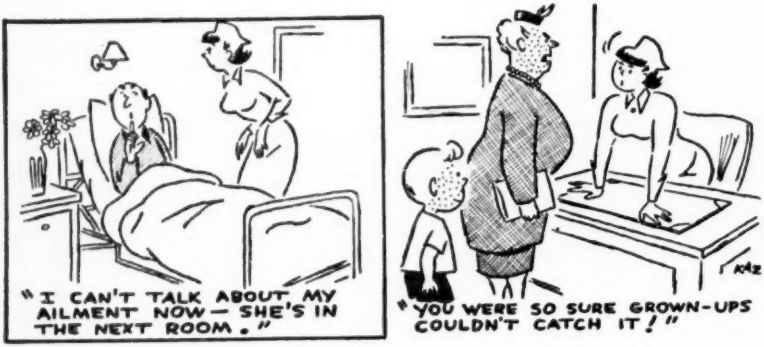
Regular Noxzema Skin Cream is a modernization of Carron Oil, fortified by adding Camphor, Menthol, Oil of Cloves and less than ½% of Phenol in a greaseless, solidified emulsion. Its reaction is almost neutral –the pH value being 7.4.

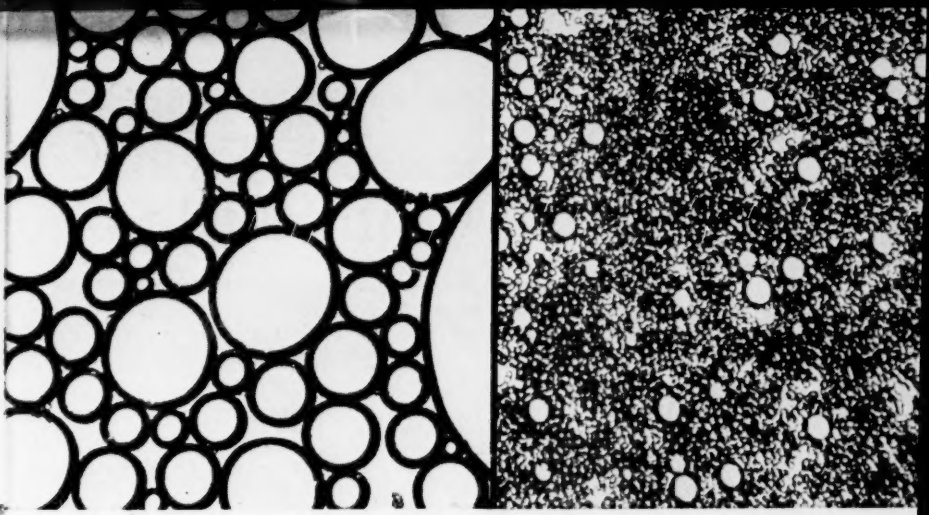
Nellie Nifty, R.N.

by kaz









1 *Oil dispersion (x133). Large irregular globules fail to mix readily with fecal mass. Phenolphthalein is not evenly distributed to stimulate peristalsis. Action may be sporadic and evacuation incomplete.*

2 *The fine oil emulsion (x133) of Agoral. The small, uniform globules and the phenolphthalein mix readily with the bowel content, producing peristalsis by more uniform lubrication and stimulation.*

Which Laxative is Better –

COARSE DISPERSION OR FINE EMULSION?

Coarse dispersions are unstable, and erratic in their effects. Any physician can recognize the superiority of the fine Agoral emulsion (*at right, above*) compared with an ordinary oil-in-water dispersion (*left*).

Free-floating oil is distasteful and often regurgitated. Large oil globules tend to coalesce and form pools in the gut, which may seep past the sphincter as anal leakage.

Agreeable to Sensitive Stomach

The fine emulsion of Agoral is palatable and will not distress a sensitive stomach. It assures more uniform dosage and distribution of the active ingredients, more uniform clinical results.

Its thorough admixture with the bowel content gives effective, uniform lubrication of the fecal mass as well as the canal. There is no loose oil to cause anal leakage.

Mixed like Homogenized Milk

Agoral is emulsified exclusively with refined white mineral oil, purified white phenolphthalein, agar-gel, tragacanth, acacia, egg-albumen and glycerin, by a special process similar to that used for homogenizing milk.

For over 30 years medical men have obtained results with Agoral with a uniformity and precision which are a constant source of satisfaction both to them and to their patients.

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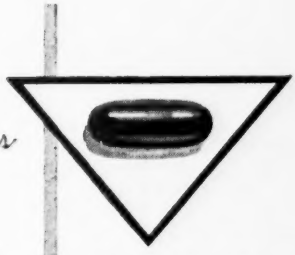

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Vitamin B_{12} (crystalline)	6 mcg.
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Natalins also contain traces of copper, zinc, manganese, magnesium and fluorine.

All vitamins are in well tolerated (hypoallergenic) form.

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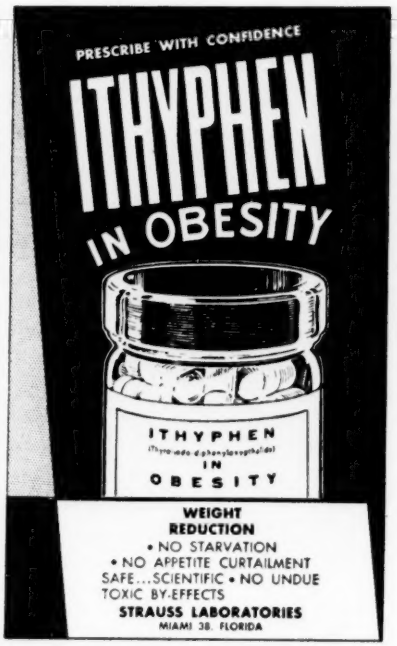

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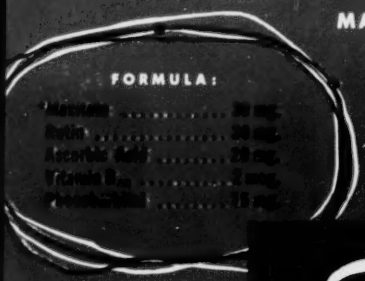

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Patients... I have met

• *The editors will pay $1 for each story published. No contributions will be returned. Send your experiences to the Patients I Have Met Editor, MODERN MEDICINE, 84 South Tenth St., Minneapolis 3, Minn.*

Place Where

One day at the hospital I noticed a little girl crying.

"Are you homesick?" I asked her.

"No," she sobbed, "I'm sick right here."—J.F.T.

A shy, self-conscious girl came into my office and asked, "Are you the pregnant doctor?"—B.S.

Garden Variety

When I was giving physical examinations at our local school, I asked a 6-year-old how many children there were in her family.

"Five," she replied.

"So many children must cost a lot," I observed.

"Oh, no," the youngster remarked seriously. "We don't buy them, we raise them."—A.S.

"Sometimes we get channel 7."

Knotty Problem

A man was shown into my office one day and complained of a severe pain in his back. I asked him to remove his coat. A glance told me what was wrong.

"Will you have to operate?" asked the man anxiously.

"Only on your suspenders," I replied. "They're knotted."—B.P.S.

Occupational Complaint

I had finished examining a new patient without finding anything seriously wrong.

"Just one more thing," I said, "are you bothered by flat feet?"

"All the time," smiled the patient. "I'm a confidence man."—A.S.

Faith Is Wonderful

A long distance call recently was from a woman who sounded breathless and panicky. She had heard that I hypnotized people. She wanted me to hynotize her husband, and at once, so that he would no longer think she was running around with other men. He was all wrong about it, she added. She hadn't run around with any other man at all, at least not since he had caught her two weeks before with someone else. And so, what she most wanted me to do, was to hypnotize him and make him understand that she wasn't running around with anyone now!—H.R.

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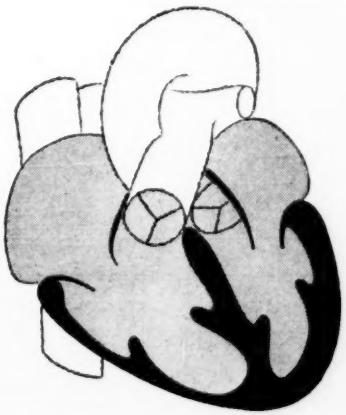
the first intramuscular digitoxin

DIGITALINE NATIVELLE®

INTRAMUSCULAR

for dependable digitalization and maintenance when the oral route is unavailable



DIGITALINE NATIVELLE INTRAMUSCULAR
is indicated for patients who are comatose, nauseated or uncooperative, or whose condition precludes the use of the oral route.

DIGITALINE NATIVELLE INTRAMUSCULAR
provides all the unexcelled virtues of its parent oral preparation.

Steady, predictable absorption.

Equal effectiveness, dose-for-dose with oral DIGITALINE NATIVELLE.

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DIGITALINE NATIVELLE INTRAMUSCULAR – 1-cc. and 2-cc. ampules, boxes of 6 and 50. Each cc. provides 0.2 mg. of the original digitoxin – DIGITALINE NATIVELLE.

*Strauss, V.; Simon, D. L.; Iglauer, A., and McGuire, J.: Clinical Studies of Intramuscular Injection of Digitoxin (Digitaline Nativelle) in a New Solvent. Am. Heart J. 44:787, 1952.

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NOW.. more efficient control of nausea and vomiting of . . .

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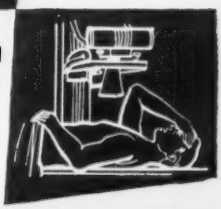

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Investigations prove that the antinausea drugs show a higher degree of effectiveness when given together.

Apolamine is a balanced combination of effective antinausea agents for a more comprehensive four-point control of nausea and the vomiting reflex.

APOLAMINE

CONTROLS THE CEREBRAL VOMITING CENTER
With a gentle sedation that depresses the vomiting reflex and relieves the patient's nervousness.

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Which give rise to salivation, gastric hypersecretion and, in turn, vomiting.

HELPS TO CONTROL METABOLIC FUNCTIONAL IMBALANCES
Provides the vitamins of the B complex which tend to reduce the incidence of nausea and vomiting.

CONTROLS LOCAL GASTRIC IRRITATION
Minimizes the nauseous reaction to various foods by decreasing the sensitivity of the mucosal lining of the stomach.

Each tablet contains 15 mg. (1/4 grain) Luminal®, 0.1 mg. (1/600 grain) atropine sulfate, 0.2 mg. (1/300 grain) scopolamine hydrobromide, 0.1 Gm. (1 1/2 grains) benzocaine, 4 mg. riboflavin, 2.5 mg. pyridoxine HCl, and 25 mg. nicotinamide.

Apolamine is supplied in bottles of 100 tablets.

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